CURRICULUM VITAE

Kawin Setsompop, Ph.D.

Professor of Radiology and, by courtesy, of Electrical Engineering,
Co-Director, Center for Cognitive and Neurobiological Imaging
Associate Chair, Research Strategic Development, Department of Radiology
Stanford University

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Research Interests

MRI acquisition and reconstruction, signal processing, inverse problems, machine learning for imaging systems, hardware and software co-design

I. Education

Ph.D., Electrical Engineering and Computer Science, MIT, 2008
M.Eng., Engineering Science (First Class Honors), Oxford University, 2003
Postdoctoral Fellow, Radiology, Harvard Medical School / MGH, 2008–2010

II. Professional Appointments

Stanford University

2025–Present Professor of Radiology and, by courtesy, of Electrical Engineering
2023–Present Co-Director, Center for Cognitive and Neurobiological Imaging
2020–Present Associate Chair, Research Strategic Development, Radiology
2020–2025 Associate Professor of Radiology and, by courtesy, of Electrical Engineering

Harvard Medical School

2016–2020 Associate Professor, Radiology
2016–2020 Affiliated Faculty, Health Sciences and Technology, Harvard–MIT
2014–2016 Assistant Professor, Radiology
2010–2014 Instructor, Radiology

III. Teaching and Mentoring

Stanford University

EE369B / BMP269B – Medical Imaging Systems II (Co-director, 2023–present)
EE369C / BMP269C – Medical Image Reconstruction (Co-director, 2024–present)
BMP211 – Biomedical Signals I (Co-director, 2022)
Invited lectures: BMP210A, EE301
Faculty: MRI: Clinical Updates and Practical Physics; Stanford Center for Continuing Medical Education

Harvard/MIT

HST.584 – Magnetic Resonance Analytic, Biochemical, and Imaging Techniques (Director, 2012–2020)
Invited lectures: EE6.556, EE6.555J, HST.583, HST.563

Formally Supervised Trainees

Supervised over 35 trainees (PhD students, postdocs, and visiting researchers), many now in faculty positions or industry leadership roles.

Years	*Name*	*Degree, institution*	*Role in training*	*Current position*
2011-2015	Berkin Bilgic	PhD, MIT	PhD Thesis committee Postdoctoral Fellow	Associate Professor, Harvard Medical School
2012-2014	Cornelius Eichner	PhD, Max Plank, Leipzig	Graduate Student	Senior Scientist, Siemens Healthineers
2011-2013	Stephen Cauley	PhD, Purdue	Research Scientist	Senior manager in neuro-MRI research, Siemens Healthineers
2013-2015	HuiHui Ye	PhD, Zhejiang	Visiting Graduate Student	Instructor, Zhejiang University
2015-2017	Haifeng Wang	PhD, UW-Milwaukee	Postdoctoral Fellow	Professor, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China
2015-2021	Daniel Polak	Msc, Heidelberg	Graduate Student	Scientist, Siemens Healthineers
2015-2019	Bo Zhao	PhD, UIUC	Postdoc; Co-supervise	Associate Professor, Zhejiang University, China
2016-2017	Elda Fischi- Gomez	PhD, EPFL	Postdoctoral Fellow	Senior Research Staff, EPFL
2016-2020	Mary Katherine Manhard	PhD, Vanderbilt	Postdoctoral Fellow	Assistant Professor, Cincinnati Children's Hospital
2016-2020	Fuyixue Wang	BSc, Tsinghua	Graduate Student	Assistant Professor, Harvard Medical School
2016-2025	Congyu Liao	PhD, Zhejiang	Graduate Student; Postdoc	Assistant Professor, UCSF
2017-2019	Sohyun Han	PhD, Ulsan	Postdoctoral Fellow	Senior Researcher, Korea Basic Science Institute, South Korea
2017-2021	Zijing Dong	PhD, MIT	Graduate Student	Assistant Professor, Harvard Medical School
2017-	Siddharth Srinivasan Iyer	PhD, MIT	Graduate Student	Engineer, Adobe
2018-2021	Merlin Fair	PhD, Imperial College	Postdoctoral Fellow	Associate Professor, UNAM, Mexico

2018-2019	Gilad Liberman	PhD, Bar-Ilan	Postdoctoral Fellow	MRI Scientist, DeepSpin GmbH
2019-	XiaoZhi Cao	PhD, Zhejiang	Postdoctoral Fellow	Research Scientist, Stanford
2021-2023	Sophie Schauman	PhD, Oxford	Postdoctoral Fellow	Postdoctoral Fellow, Karolinska Institute, Sweden
2021-2026	Nan Wang	PhD, UCLA	Postdoctoral Fellow	Assistant Professor, UCSF
2022-2023	Quan Chen	PhD, Shanghai Jiao Tong Univ.	Postdoctoral Fellow	Postdoctoral Fellow, USCF
2022-	Mahmut Yurt	Msc, Bilkent Univ.	EE graduate student Stanford University	PhD candidate, Stanford
2022-	Ariel Hannum		BioE graduate student Stanford University	PhD candidate, Stanford
2022-	Itamar Terem	Msc, Stanford	EE graduate student Stanford University	PhD candidate, Stanford
2022	Molin Zhang	BSc, Tsinghua Univ.	Visiting Student Researcher	Engineer, Apple
2022-2023	Yannick Brackenier	PhD, King's College	Visiting Student Researcher	Senior Business Analyst, Kearney
2023-2025	Zihan Zhou	PhD, Zhejiang	Postdoctoral Fellow	Engineer, GE
2023-	Mengze Gao	BE, Tsinghua	BMP graduate student Stanford University	PhD candidate, Stanford
2023-2025	Mark Nishimura	BS, MS, Stanford	EE graduate student Stanford University	Engineer, Vista.ai
2023-	Daniel Abraham	BS, UC Berkeley	EE graduate student, Stanford University	PhD candidate, Stanford
2023-	Yonatan Urman	MSc, Tel-Aviv Univ.	EE graduate student, Stanford University	PhD candidate, Stanford
2023-	Aizada Nurdinova	MS, Technical University of Munich	BMP graduate student Stanford University	PhD candidate, Stanford
2023-	Zachary Shah	MS, Stanford University	EE graduate student, Stanford University	PhD candidate, Stanford
2023-	Yimeng Lin	BS, Tsinghua	EE graduate student, Stanford University	PhD candidate, Stanford
2024-	JaeHyeok Bae	BS. Seoul National	EE graduate student, Stanford University	PhD candidate, Stanford

2024	Rachel Hollett	BS, Stanford	EE Master Student	Master Student, Stanford
2025-	Zimu Huo	M. Eng Cambridge	BMP graduate student Stanford University	PhD candidate, Stanford

Thesis Committee Member

Year	*Name*	*Degree*	*Institute*	*Department*
2023	Guanhua Wang	PhD	University of Michigan	Electrical Engineering
2023	Matt McCready	PhD	Stanford University	Electrical Engineering
2023	Molin Zhang	PhD	MIT	EECS
2024	Cagan Alkan	PhD	Stanford University	Electrical Engineering
2025	Tyler Cork	PhD	Stanford University	Electrical Engineering
2025	Julio Oscanoa	PhD	Stanford University	Electrical Engineering
2026	Xuetong Zhou	PhD	Stanford University	Bioengineering
2026	Ariel Hannum	PhD	Stanford University	Bioengineering
2026	Mahmut Yurt	PhD	Stanford University	Electrical Engineering

IV. Honors and Awards

2000 – 2003	College scholar, Keble College, Oxford University
2010	NIH: K99/R00 Career development award
2012	MICCAI: Young Scientist Award Finalist (Mentor for Berkin Bilgic)
2015	ISMRM: Junior Fellow (Mentor for Berkin Bilgic)
2016	NIBIB New Horizon plenary lecture, ISMRM Annual Meeting
2017	Opening plenary lecture, Society for MR Radiographers & Technologists (SMRT) Annual Meeting
2017	First place award, Diffusion study group, ISMRM (Mentor for Elda Fischi-Gomez)
2018	NIH: K99/R00 NIBIB Career development award (Co-mentor for Bo Zhao)
2019	ISMRM: Young Investigator Award Finalist (Mentor for Fuyixue Wang)
2019	2nd place, Young Investigator Award (Mentor for Congyu Liao) Overseas Chinese Society for Magnetic Resonance in Medicine (OSCMRM)
2020	ISMRM Senior Fellow
2020	First place award, Diffusion study group, ISMRM (Mentor for Merlin Fair)
2021	First place award; qMR Study Group competition, ISMRM (Mentor for Fuyixue Wang)
2021	ISMRM German Chapter: Best PhD Thesis Award (Mentor for Daniel Polak)
2022	ISMRM Junior Fellow (Mentor for Congyu Liao)
	ISMRM Junior Fellow (Mentor for Nan Wang)
	ISMRM Junior Fellow (Mentor for Zijing Dong)
2023	Best abstract award; ISMRM data sampling workshop (Mentor for Mahmut Yurt)
2023	Distinguished Investigator, Academy for Radiology and Biomedical Imaging Research
2024	ISMRM Junior Fellow (Mentor for Xiaozhi Cao)
2024	K99/R00 NIBIB Career development award (Mentor for Nan Wang)
2025	ISMRM: Young Investigator Award Finalist (Mentor for Nan Wang)
2025	First place award, Motion-correction study group, ISMRM (Mentor for Nan Wang)

V. Public and Professional Service

Local

2020	Stanford Radiology, Faculty search committee: MIPS Neuro/CVI
2020	Stanford Radiology, Faculty search committee: VA NeuroRadiology
2021-present	Stanford EE, graduate admission committee
2022	Stanford BioMedical Physics (BMP), graduate admission committee
2021-23	Stanford BioMedical Physics (BMP), curriculum committee
2022	Stanford Radiology, Faculty search committee: Pediatric Neuroradiology section chief
2022-2023	Stanford's Cognitive and Neurobiological Imaging (CNI); Advisory Board member
2024	Stanford Radiology, Faculty search committee: NeuroRadiology
2024-present	Stanford's Neurosciences Preclinical Imaging Lab (NPIL); Advisory Board member.
2025, 2026	Stanford EE, Faculty search committee
2026	Stanford C-ShaRP's Instrumentation and Enhancement Program (IEP), review committee.

Regional

2014	Co-organizer, Biomedical Imaging session 40th annual Northeast Bioengineering Conference (NEBEC)

International

2012	Founder MR club of Thailand (MCT)
2012	Chair, ISMRM global outreach workshop, Thailand
2015	Co-chair, ISMRM challenge: competition on RF pulse design
2015	Co-chair, ISMRM workshop on Simultaneous MultiSlice imaging
2015	Advisory Board, Magnetic Resonance in South East Asia workshop, Singap
2018- 2020	Annual Meeting Program Committee, ISMRM
2018	Advisory Board, KinetiCor—Motion Correction Technologies
2021	Advisory Board, Subtle Medical
2023	Organizing committee, ISMRM global outreach workshop, Thailand
2025	Organizing committee, 4th Neuroscience Conference (w/ High performance MRI systems), KCL, London
2026	Senior Fellow Award committee, ISMRM

Grant Review Activities

2015, 2018, 2023	Netherlands Organization of Scientific Research (STW)
2014	Austrian Science Fund (FWF)
2016-2019	National Institute of Health: BMIT-A, IGIS, BRAIN Initiative Fellowship
2019	Welcome Trust Fellowship (U.K.)
2021	French National Research Agency
2021-2022	National Institute of Health- EITN study section
2022	Swiss National Science Foundation
2023	Austrian Science Fund (FWF) National Institute of Health - CSR peer-review panel (videoconference), ZRG1 MCST-U 81 S, Special Topics: Neuroimaging methods and data analysis

Editorial Activities

Ad hoc reviewer

Magnetic Resonance in Medicine; NeuroImage; IEEE Transactions on Medical Imaging; Magnetic Resonance Materials in Physics, Biology and Medicine (MAGMA); Journal of Magnetic Resonance Imaging; PLOS One; Human Brain Mapping, Nature in Biomedical Engineering; Nature Communication; Nature

Other Editorial Roles

2015	Guest Editor, Magnetic Resonance in Medicine, *Virtual Issue on Simultaneous MultiSlice Imaging*
2015 – Present	Editorial Board, Tomography

VI. Grants

Current Funding

Siemens Medical Solution **Setsompop PI** **06/25– 05/29**

Smart and adaptive neuro-exam w/ rapid & robust acquisition

The aim of this project is to develop technologies to enable smart and adaptive neuroimaging exam that can be performed with high precision, rapidly and robustly.

Siemens Medical Solution. **Polimeni/Setsompop PI** **06/25 – 05/29**

Robust, plug-and-play high-performance neuroimaging at 7T

The objective is to develop a "plug-and-play" 7T MR scanner to be operated for neuro-imaging as straightforward as a 3T MR scanner, but with the boost in SNR and CNR provided by the higher field strength.

General Electric (A-122) **Setsompop PI.** **06/24 – 06/26**

Technique development for advanced diffusion imaging of the brain (renewal pending)

Neuroimaging is the most widely used clinical application of MRI, but its performance at high spatiotemporal resolutions using current acquisition approaches has been severely limited by the slow encoding, low-SNR, and image artifacts. This project aims to develop new acquisition technologies to address these limitations.

2R01 MH116173 **Setsompop PI** **11/20 – 06/29**

Next generation in-vivo diffusion imaging at submillimeter resolution

We aim to develop imaging technologies to allow mesoscale diffusion MRI (dMRI) and mesoscale joint diffusion-relaxometry MRI with rich information, to improve tractography's robustness and enhance capability to extract detailed microstructural information.

R21 EB038677 **Setsompop PI** **07/26 – 06/28**

Faster MRI through portable Resonance Gradient Coils with fast calibration and reconstruction

The goal of this work is to develop a portable Resonance Gradient Coil (RGC) technology with seamless calibration and reconstruction that can provide 2-4x improvement in MRI encoding speed. We will then demonstrate the benefit of this technology on two important applications with high payoffs: i) in accelerating functional MRI, and ii) increating a form-fitting wearable RGC suitable for rapid knee-imaging and extremity.

R03 EB036571 **Juan-Rivas PI** **12/24-11/26**

Development of compact & highly efficiency MRcompatible switching power amplifiers for multi-coil shim & gradient arrays

The objective of this project is to develop highly compact and efficient switching power amplifiers capable of inbore operation as an enabling technology for magnetic resonance imaging (MRI) techniques based on multi-coil (MC) shim and gradient arrays.

Role: Investigator

U24 NS129893 **Wang PI** **05/23 – 04/28**

Advancing fMRI Acquisition through Dissemination of EPTI – An Efficient Distortion-Free Multi-Contrast Imaging

The goal of this project is to broadly disseminate EPTI as the next-generation fMRI acquisition tool.

Role: Sub-PI

R01 HD114719 **Liao PI** **09/24 – 05/29**

Robust and precise imaging of infant brain development with magnetic resonance imaging

Our objective is to develop advanced in vivo MRI technologies for motion-robust, high-resolution whole-brain multi-parametric quantitative MRI (qMRI) and diffusion MRI (dMRI) on 3T clinical scanners in a practical timeframe. These techniques are specifically designed for infant brain development studies, targeting children up to 24 months old, without requiring sedation or sleep during scans.
Role: Sub-PI

R21 NS144835 **Han PI** **08/25 – 07/27**

Defining Mechanisms of Cognitive Dysfunction in Central Nervous System Autoimmunity
The immediate impact of this study is to stop subclinical, relapse-independent progression and enhance productivity and quality of life, eagerly sought by patients living with NMO. In broader terms, this proposal has a high potential for advancing our understanding of the pathophysiology of immune mediated CD and development of therapies targeting neurotoxic immune responses.
Role: Investigator

Prior Funding

08/2010 – 07/2015 NIH/NIBIB/**R00/K99EB012107**
MRI technology for measurement of functional and structural connectivity in brain.
Role: PI

09/2012 – 11/2017 NIH/**R01MH097979**
Taking Advance Diffusion Imaging to the Clinic for Pediatric Patients with ADHD
Role: SubcontractPI
PI: Yogesh Rathi

09/2014 – 05/2017 NIH/**R24MH106096**
MRI Corticography (MRC0G): Microscale Human Cortical Imaging
Role: Co-PI
PIs : David Feinberg, Kawin Setsompop, Chunlei Liu, Pratik Mukherjee

08/2013 – 07/2017 NIH/**R01EB017219**
Magnetic Resonance Fingerprinting (MRF) for Improved high field MRI
Role: Investigator
PI: Mark Griswold

09/2014 – 05/2017 NIH/**R24MH106053**
Magnetic Particle Imaging (MPI) for Functional Brain Imaging in Humans
Role: Investigator
PI: Lawrence Wald

04/2016 – 03/2018 NIH/**R44NS084788**
Highly Accelerated Simultaneous Multi-Slice Phase Contrast MRI
Role: Subcontract-PI
PI: David Feinberg

04/2015 – 03/2018 NIH/**R44NS084788**
Highly effective cerebral perfusion MRI
Role: Subcontract-PI
PI : David Feinberg

06/2014 – 05/2019 NIH/**P41EB015896** Center for Functional Imaging Technologies
Role: Investigator
PI: Bruce Rosen

04/01/16 – 12/31/21 NIH/**R01EB020613**
Rapid MRI acquisition for pediatric low-grade gliomas
Role: PI

09/15/16 – 07/31/21 NIH/**R01MH111419**

Improving Human fMRI through Modeling and Imaging Microvascular Dynamics
Role: Investigator
PI: Jonathan Polimeni

09/15/17 – 07/31/20 NIH/**R01MH111917**
Patient-specific, Effective, and Rational Functional Connectivity Targeting for DBS in OCD
Role: Investigator
PI: Nikolaos Makris

09/21/18 – 06/20/23 NIH/**U01EB026996**
Connectome 2.0: Developing the next generation human MRI scanner for bridging studies of the micro-, meso- and macro-connectome
Role: Investigator
PIs Basser, Huang, Kirsch, Rosen, Wald

04/01/18 – 01/31/22 NIH/**R01EB016695**
Array-Compressed Parallel Transmission for High Resolution Neuroimaging at 7T
Role: Sub-PI
PI: William Grissom

11/01/20 – 07/31/23 NIH/**U01 EB025162**
MRI Corticography: Developing Next Generation Microscale Human Cortex MRI Scanner
Role: Co-PI
PIs : David Feinberg, Kawin Setsompop, Chunlei Liu, Pratik Mukherjee, Lawrence Wald

04/06/21 – 06/30/23 **General Electric (A-122)**
Technique development for advanced diffusion & multiparametric imaging of the brain
Role: PI

09/01/22 – 08/31/24 **General Electric (A-131)**
Stanford Neuro TigerTeam
Improve detection of focal cortical dysplasia in epilepsy with better MRI
Role: Investigator
PI: Jennifer McNab

04/01/15 – 11/30/24 NIH/**R01 EB019437**
fMRI Technologies for Imaging at the Limit of Biological Spatiotemporal Resolution
Role: co-PI
PIs: Polimeni and Setsompop

08/05/22 – 04/30/25 NIH/**R01 HL155962**
Rapid Free-Breathing Self-Gated Spiral Pulse Sequences for Simultaneous Cine and T1 mapping
Role: Investigator
PI: Salerno

11/01/20 – 04/30/25 NIH/**P41 EB030006**
Center for Mesoscale Mapping
Project 2: Acquisition technology for in vivo functional and structural MR imaging at the mesoscopic scale
PI: Rosen; Project 2 lead: Setsompop

09/01/22 – 08/31/25 NIH/**R01 EB033206**
An acquisition and reconstruction framework to enable mesoscale human fMRI on clinical 3 Tesla scanners
PI: Setsompop

VII. Scholarly Publications

Peer-reviewed original research

1. **Setsompop K**, Wald LL, Alagappan V, Gagoski B, Hebrank F, Fontius U, Schmitt F, Adalsteinsson E. Parallel RF transmission with eight channels at 3 Tesla. Magn Reson Med. 2006 Nov;56(5):1163-71. PubMed PMID: 17036289.
2. Alagappan V, Nistler J, Adalsteinsson E, **Setsompop K**, Fontius U, Zelinski A, Vester M, Wiggins GC, Hebrank F, Renz W, Schmitt F, Wald LL. Degenerate mode band-pass birdcage coil for accelerated parallel excitation. Magn Reson Med. 2007 Jun;57(6):1148-58. PubMed PMID: 17534905.
3. **Setsompop K**, Wald LL, Alagappan V, Gagoski BA, Adalsteinsson E. Magnitude least squares optimization for parallel radio frequency excitation design demonstrated at 7 Tesla with eight channels. Magn Reson Med. 2008 Apr;59(4):908-15. doi: 10.1002/mrm.21513. PubMed PMID: 18383281; PubMed Central PMCID: PMC2715966.
4. Zelinski AC, Wald LL, **Setsompop K**, Alagappan V, Gagoski BA, Goyal VK, Adalsteinsson E. Fast slice-selective radio-frequency excitation pulses for mitigating B+1 inhomogeneity in the human brain at 7 Tesla. Magn Reson Med. 2008 Jun;59(6):1355-64. doi: 10.1002/mrm.21585. PubMed PMID: 18506800; PubMed Central PMCID: PMC2723802.
5. Zelinski AC, Wald LL, **Setsompop K**, Goyal VK, Adalsteinsson E. Sparsity-enforced slice-selective MRI RF excitation pulse design. IEEE Trans Med Imaging. 2008 Sep;27(9):1213-29. doi: 10.1109/TMI.2008.920605. PubMed PMID: 18779063; PubMed Central PMCID: PMC2666002.
6. **Setsompop K**, Alagappan V, Zelinski AC, Potthast A, Fontius U, Hebrank F, Schmitt F, Wald LL, Adalsteinsson E. High-flip-angle slice-selective parallel RF transmission with 8 channels at 7 T. J Magn Reson. 2008 Nov;195(1):76-84. doi:10.1016/j.jmr.2008.08.012. Epub 2008 Aug 30. PubMed PMID: 18799336; PubMed Central PMCID: PMC2610679.
7. **Setsompop K**, Alagappan V, Gagoski B, Witzel T, Polimeni J, Potthast A, Hebrank F, Fontius U, Schmitt F, Wald LL, Adalsteinsson E. Slice-selective RF pulses for in vivo B1+ inhomogeneity mitigation at 7 tesla using parallel RF excitation with a 16-element coil. Magn Reson Med. 2008 Dec;60(6):1422-32. doi: 10.1002/mrm.21739. PubMed PMID: 19025908; PubMed Central PMCID: PMC2635025.
8. **Setsompop K**, Alagappan V, Gagoski BA, Potthast A, Hebrank F, Fontius U, Schmitt F, Wald LL, Adalsteinsson E. Broadband slab selection with B1+ mitigation at 7T via parallel spectral-spatial excitation. Magn Reson Med. 2009 Feb;61(2):493-500. doi: 10.1002/mrm.21834. PubMed PMID: 19161170; PubMed Central PMCID: PMC2632721.
9. **Setsompop K**, Gagoski BA, Polimeni JR, Witzel T, Wedeen VJ, Wald LL. Blipped-controlled aliasing in parallel imaging for simultaneous multislice echo planar imaging with reduced g-factor penalty. Magn Reson Med. 2012 May;67(5):1210-24. doi: 10.1002/mrm.23097. Epub 2011 Aug 19. PubMed PMID: 21858868; PubMed Central PMCID: PMC3323676. ***Most cited article in MRM 2013***
10. **Setsompop K**, Cohen-Adad J, Gagoski BA, Raij T, Yendiki A, Keil B, Wedeen VJ, Wald LL. Improving diffusion MRI using simultaneous multi-slice echo planar imaging. Neuroimage. 2012 Oct 15;63(1):569-80. doi: 10.1016/j.neuroimage.2012.06.033. Epub 2012 Jun 23. PubMed PMID: 22732564; PubMed Central PMCID: PMC3429710.
11. Bilgic B, **Setsompop K**, Cohen-Adad J, Yendiki A, Wald LL, Adalsteinsson E. Accelerated diffusion spectrum imaging with compressed sensing using adaptive dictionaries. Magn Reson Med. 2012 Dec;68(6):1747-54. doi: 10.1002/mrm.24505. Epub 2012 Sep 24. PubMed PMID: 23008145; PubMed Central PMCID: PMC3504650. ***Cover article for Dec 2012***

12. Keil B, Blau JN, Biber S, Hoecht P, Tountcheva V, **Setsompop K**, Triantafyllou C, Wald LL. A 64-channel 3T array coil for accelerated brain MRI. Magn Reson Med. 2013 Jul;70(1):248-58. doi: 10.1002/mrm.24427. Epub 2012 Jul 31. PubMed PMID: 22851312; PubMed Central PMCID: PMC3538896.
13. **Setsompop K**, Kimmlingen R, Eberlein E, Witzel T, Cohen-Adad J, McNab JA, Keil B, Tisdall MD, Hoecht P, Dietz P, Cauley SF, Tountcheva V, Matschl V, Lenz VH, Heberlein K, Potthast A, Thein H, Van Horn J, Toga A, Schmitt F, Lehne D, Rosen BR, Wedeen V, Wald LL. Pushing the limits of in vivo diffusion MRI for the Human Connectome Project. Neuroimage. 2013 Oct 15;80:220-33. doi: 10.1016/j.neuroimage.2013.05.078. Epub 2013 May 24. PubMed PMID: 23707579; PubMed Central PMCID: PMC3725309.
14. 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. Epub 2013 Jul 4. PubMed PMID: 23846466; PubMed Central PMCID: PMC4689148.
15. Sotiropoulos SN, Moeller S, Jbabdi S, Xu J, Andersson JL, Auerbach EJ, Yacoub E, Feinberg D, **Setsompop K**, Wald LL, Behrens TE, Ugurbil K, Lenglet C. Effects of image reconstruction on fiber orientation mapping from multichannel diffusion MRI: reducing the noise floor using SENSE. Magn Reson Med. 2013 Dec;70(6):1682-9. doi: 10.1002/mrm.24623. Epub 2013 Feb 7. PubMed PMID: 23401137; PubMed Central PMCID: PMC3657588.
16. Poser BA, Anderson RJ, Guérin B, **Setsompop K**, Deng W, Mareyam A, Serano P, Wald LL, Stenger VA. Simultaneous multislice excitation by parallel transmission. Magn Reson Med. 2014 Apr;71(4):1416-27. doi: 10.1002/mrm.24791. Epub 2013 May 28. PubMed PMID: 23716365; PubMed Central PMCID: PMC3830622.
17. Eichner C, **Setsompop K**, Koopmans PJ, Lützkendorf R, Norris DG, Turner R, Wald LL, Heidemann RM. Slice accelerated diffusion-weighted imaging at ultra-high field strength. Magn Reson Med. 2014 Apr;71(4):1518-25. doi: 10.1002/mrm.24809. Epub 2013 Jun 24. PubMed PMID: 23798017.
18. Chang WT, **Setsompop K**, Ahveninen J, Belliveau JW, Witzel T, Lin FH. Improving the spatial resolution of magnetic resonance inverse imaging via the blipped-CAIPI acquisition scheme. Neuroimage. 2014 May 1;91:401-11. doi: 10.1016/j.neuroimage.2013.12.037. Epub 2013 Dec 27. PubMed PMID: 24374076; PMCID: PMC4086630.
19. Cauley SF, Polimeni JR, Bhat H, Wald LL, **Setsompop K**. Interslice leakage artifact reduction technique for simultaneous multislice acquisitions. Magn Reson Med. 2014 Jul;72(1):93-102. doi: 10.1002/mrm.24898. Epub 2013 Aug 20. PubMed PMID: 23963964; PubMed Central PMCID: PMC4364522.
20. Zhao W, Cohen-Adad J, Polimeni JR, Keil B, Guerin B, **Setsompop K**, Serano P, Mareyam A, Hoecht P, Wald LL. Nineteen-channel receive array and four-channel transmit array coil for cervical spinal cord imaging at 7T. Magn Reson Med. 2014 Jul;72(1):291-300. doi: 10.1002/mrm.24911. Epub 2013 Aug 20. PubMed PMID: 23963998; PubMed Central PMCID: PMC4761437.
21. 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. Epub 2013 Nov 4. PubMed PMID: 24395184; PubMed Central PMCID: PMC4106040.
22. Eichner C, Jafari-Khouzani K, Cauley S, Bhat H, Polaskova P, Andronesi OC, Rapalino O, Turner R, Wald LL, Stufflebeam S, **Setsompop K**. Slice accelerated gradient-echo spin-echo dynamic susceptibility contrast imaging with blipped CAIPI for increased slice coverage. Magn Reson Med. 2014 Sep;72(3):770-8. doi:10.1002/mrm.24960. Epub 2013 Oct 28. PubMed PMID: 24285593; PubMed Central PMCID: PMC4002660.

23. Rathi Y, Michailovich O, Laun F, **Setsompop K**, Grant PE, Westin CF. Multi-shell diffusion signal recovery from sparse measurements. Med Image Anal. 2014 Oct;18(7):1143-56. doi: 10.1016/j.media.2014.06.003. Epub 2014 Jul 5. PubMed PMID: 25047866; PubMed Central PMCID: PMC4145038.
24. Eichner C, Wald LL, **Setsompop K**. A low power radiofrequency pulse for simultaneous multislice excitation and refocusing. Magn Reson Med. 2014 Oct;72(4):949-58. doi: 10.1002/mrm.25389. Epub 2014 Aug 7. PubMed PMID: 25103999.
25. 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. Epub 2013 Nov 20. PubMed PMID: 24259479; PubMed Central PMCID: PMC4111791.
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On Improving the Acquisition and Reconstruction Of Spatio-Temporal Magnetic Resonance Imaging

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Magnetic resonance imaging of pulsatile brain motion and its applications

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Abstracts, Poster Presentations and Exhibits Presented at Professional Meetings (Selected from last 5 years)

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2. Gong T, Fair MJ, **Setsompop K**, Zhang H. Simultaneous Mapping Of Compartment-Specific T2 And T2* With Diffusion-PEPTIDE Imaging. ISMRM, 2022, program number: 1347.
3. Dai E, Dong Z, **Setsompop K**, McNab J. A Subspace EPTI Reconstruction With Magnitude-Only Bases And Synergistic Phase Bias Updating For Distortion-Free Diffusion-Relaxometry MRI. ISMRM, 2022, program number: 3451.
4. Sengupta S, Polimeni JR, **Setsompop K**, Grissom WA. Shuttered Echo Planar FMRI With Dynamic Motion And Phase Correction. ISMRM, 2022, program number: 0362.
5. Liu Y, Liao C, Kim D, **Setsompop K**, Haldar JP. Estimating Multicomponent 2D Relaxation Spectra With A ViSTa-MR Fingerprinting Acquisition. ISMRM, 2022, program number: 4389.
6. Wang N, Liao C, Srinivasan S, Cao X, Haldar J, **Setsompop K**. Circular Echo-Planar Time-Resolved Imaging (CEPTI) For Rapid Time-Resolved And Quantitative Imaging. ISMRM, 2022, program number: 0761.
7. Wang F, Dong Z, Wald LL, Polimeni JR, **Setsompop K**. Mapping Cortical-Depth Dependent Responses In Human Motor Cortex Using Spin-Echo Echo Planar Time-Resolved Imaging (SE-EPTI). ISMRM, 2022, program number: 3332.
8. Zhang Z, Ye H, Wang L, **Setsompop K**, Liu H, Bilgic B. BUDA-SAGE With Slider Encoding And Self-Supervised Denoising Enables Fast, Distortion-Free, High-Resolution T And T Mapping. ISMRM, 2022, program number: 3820.
9. Berman A, **Setsompop K**, Witzel T, Grissom WA, Polimeni JR. Improved High-Resolution FMRI Image Quality With Simultaneous Multislice VFA-FLEET Using A Novel Multi-Kernel Slice-GRAPPA Algorithm. ISMRM, 2022, program number: 1106.
10. Hannum A, Cork TE, Fair MJ, **Setsompop K**, Ennis DB. Phase Stabilization With Motion Compensated Gradient Waveforms For Brain Diffusion Weighted Imaging (DWI). ISMRM, 2022, program number: 1625.
11. Wang F, Dong Z, Chen J, **Setsompop K**, Polimeni JR, Wald LL. Improving FMRI Acquisition Using Single- Shot EPTI With Distortion-Free High-SNR High-CNR Multi-Echo Imaging. ISMRM, 2022, program number: 3330.
12. Zhong Z, Cao X, Liao C, Li Z, Syed A, **Setsompop K**, Vasanawala SS. T2-Weighted Free-Breathing 3D Abdominal Imaging Using Magnetization Prepared SPGR. ISMRM, 2022, program number: 1525.
13. Iyer SS, Sandino CM, Yurt M, Cao X, Liao C, Schauman S, **Setsompop K**. SMILR - Subspace Machine Learning Reconstruction. ISMRM, 2022, program number: 3466.
14. Cork TE, Middione MJ, Loecher M, Liao C, Moulin K, **Setsompop K**, Ennis DB. Comparison Of Blip-Up And Blip-Down EPI Distortion Correction Methods For Cardiac Diffusion Tensor Imaging. ISMRM, 2022, program number: 1560.
15. Liao C, Yarach U, Cao X, Iyer SS, Wang N, Kim TH, Bilgic B, Kerr A, **Setsompop K**. High-Fidelity Submillimeter-Isotropic-Resolution Diffusion MRI Through GSlider-BUDA And Circular EPI With S- LORAKS Reconstruction. ISMRM, 2022, program number: 0042.
16. Cao X, Liao C, Zhong Z, Dai E, Iyer SS, Hannum AJ, Yurt M, Skare S, **Setsompop K**. 3D Diffusion-Prepared MRF (3DM) With Cardiac Gating For Rapid High-Resolution Whole-Brain T , T , Proton Density And Diffusivity Mapping. ISMRM, 2022, program number: 0101.

17. Schauman S, Iyer SS, Yurt M, Cao X, Liao C, Zhong Z, Wang G, Zaharchuk g, Vasanawala S, **Setsompop K**. Toward A 1-Minute High-Resolution Brain Exam - MR Fingerprinting With Fast Reconstruction And ML-Synthesized Contrasts. ISMRM, 2022, program number: 0053.
18. Rathi Y, Ning L, Liao C, Ji Y, Westin CF, Zhang F, Makris N, O'Donnell LJ, **Setsompop K**. T2-Dependence Of Deep And Superficial White Matter Tractography. ISMRM, 2022, program number: 1256.
19. Yarach U, Chatnuntawech I, Liao C, Teerapittayanon S, Iyer SS, Kim TH, Cho J, Bilgic B, Hu Y, Hargreaves B, **Setsompop K**. Rapid Reconstruction Of Blip Up-Down Circular EPI (BUDA-CEPI) For Distortion-Free DMRI Using An Unrolled Network With U-Net As Priors. ISMRM, 2022, program number: 4348.
20. Gagoski B, Cho J, Zhang Z, Kim TH, Lo WC, Polak D, Warntjes M, Cauley S, **Setsompop K**, Grant EP, Bilgic B. Time-Efficient, High Resolution 3T Whole Brain Relaxometry Using 3D-QALAS With Wave- CAIPI Readouts. ISMRM, 2022, program number: 4388.
21. Liao C, Cao X, Iyer SS, Zhou Z, Liu Y, Haldar J, Yurt M, Gong T, Wu Z, He H, Zhong J, Kerr A, **Setsompop K**. Mesoscale Myelin-Water Fraction And T /T /PD Mapping Through Optimized 3D ViSTa-MRF And Stochastic Reconstruction With Preconditioning. ISMRM, 2022, program number: 0365.
22. Beckett A, Vu AT, Ahn S, Torrisi S, Polimeni JR, Yacoub E, **Setsompop K**, Bilgic B, Gunamony S, Potthast A, Dietz P, Chang Y, Feinberg DA. Evaluation Of Single-Shot EPI With Sub-Millimeter Resolution FMRI On The Next-Generation 7T Brain Scanner. ISMRM, 2022, program number: 0258.

2021

1. Dong Z, Wang F, Wald LL, **Setsompop K**. Accelerated Echo-train shifted EPTI (ACE-EPTI) for fast distortion-blurring-free high-resolution diffusion imaging with minimal echo time. ISMRM, 2021, program number: 1316.
2. Wang F, Dong Z, Reese T, Wald LL, **Setsompop K**. Fast and repeatable multi-parametric mapping using 3D Echo-Planar Time-resolved Imaging (3D-EPTI). ISMRM, 2021, program number: 0553.
3. Liao C, Cao X, Gong T, Wu Z, Zhou Z, He H, Zhong J, **Setsompop K.** High-resolution myelin-water fraction (MWF) and T1/T2/proton-density mapping using 3D ViSTa-MR fingerprinting with subspace reconstruction. ISMRM, 2021, program number: 1545.
4. Dong Z, Wang F, Xiang J, **Setsompop K**. Motion-corrected 3D-EPTI with 4D navigator for fast and robust whole-brain quantitative imaging. ISMRM, 2021, program number: 0119.
5. Merlin F, **Setsompop K**. Rapid calibration scan for estimating temporally-varying eddy currents in diffusion imaging using a time-resolved PEPTIDE imaging approach. ISMRM, 2021, program number: 0620.
6. Wang F, Dong Z, Wald LL, Polimeni J, **Setsompop K**. Simultaneous pure spin-echo, and gradient-echo BOLD fMRI using Echo Planar Time-resolved Imaging (EPTI) for mapping laminar fMRI responses. ISMRM, 2021, program number: 0631.
7. Cao X, Liao C, Iyer SS, Liberman G, Dong Z, Gong T, Zhou Z, He H, Zhong J, Bilgic B, **Setsompop K**. Optimized multi-axis spiral projection MRF with subspace reconstruction for rapid 1-mm isotropic whole-brain MRF in 2 minutes. ISMRM, 2021, program number: 173.
8. Liu Y, **Setsompop K**, Haldar J. Accelerating gSlider-based Diffusion MRI: Phase constraints enable reduced RF encoding. ISMRM, 2021, program number: 1179.
9. Riedel M, **Setsompop K**, Mertins A, Börnert P. 3D rigid motion correction for navigated interleaved simultaneous multi-slice DWI. ISMRM, 2021, program number: 1372.
10. Berman A, Wang F**, Setsompop K**, Chen JJ, Polimeni J. Biophysical simulations of the BOLD fMRI signal using realistic imaging gradients: Understanding macrovascular contamination in Spin-Echo EPI.

ISMRM, 2021, program number: 3398.

11. Clifford B, Conklin J, Huang S, Feiweier T, Hosseini Z, Goncalves Filho A, Tabari A, Demir S, Lo WC, Longo M, Lev M, Schaefer P, Rapalino O, **Setsompop K**, Bilgic B, Cauley S. Clinical evaluation of an AI- accelerated two-minute multi-shot EPI protocol for comprehensive high-quality brain imaging. ISMRM, 2021, program number: 0661.
12. Lithen A, Tamashausky A, Bilgic B, **Setsompop K**, Kennedy B, Mujica-Parodi L, Wald LL, Nasr S, Stockmann J. Combined active and passive shimming of the temporal lobes using graphite-silicone earplugs and a multi-coil BO shim array. ISMRM, 2021, program number: 0461.
13. Doig H, Van den Boomen M, Connors E, Kim J, Coll-Font J, Eder R, Chen S, Iwamoto Y, Emblem K, **Setsompop K**, Prakken N, Borra R, Nguyen C. Comprehensive multiparametric cardiac MRI tissue phenotyping (LGE, T1, T2, DWI, BOLD & VAI) of acute myocardial infarction in swine. ISMRM, 2021, program number: 1249.
14. Feinberg D, Dietz P, Liu C, **Setsompop K**, Mukherjee P, Wald LL, Vu An, Beckett A, Insua I, Schröder M, Stocker S, Bell P, Rummert E, Davids M. Design and Development of a Next-Generation 7T human brain scanner with high-performance gradient coil and dense RF arrays. ISMRM, 2021, program number: 0562.
15. Dai F, Lee P, Dong Z, Fu F, **Setsompop K**, McNab J. Distortion-Free Diffusion-Relaxometry Imaging with Self-navigated Cartesian-based Echo-Planar Time Resolved Acquisition (cEPTI). ISMRM, 2021, program number: 1318.
16. Yu H, Dong Z, Arefeen Y, Liao C, **Setsompop K**, Bilgic B. eRAKI: Fast Robust Artificial neural networks for K-space Interpolation (RAKI) with Coil Combination and Joint Reconstruction. ISMRM, 2021, program number: 0273.
17. Beckett A, Torrisi S, **Setsompop K**, Feinberg D, Vu A. Evaluation of spin-echo generalized Slice Dithered Enhanced Resolution (gSLIDER) for high-resolution fMRI at 3T. ISMRM, 2021, program number: 2695.
18. Zhang Z, Merlin F, Wang F, Dong Z, Tang W, Li M, Wei D, **Setsompop K**, Ying K. Fast MR thermometry based on propeller echo-planar time-resolved imaging with dynamic encoding (PEPTIDE). ISMRM, 2021, program number: 0248.
19. Li Z, Tian Q, Ngamsombat C, Cartmell S, Conklin J , Goncalves Filho AL, Lo WC, wang G, Ying K, **Setsompop K**, Fan Q, Bilgic B, Cauley S, Huang S. HDnGAN: High-fidelity ultrafast volumetric brain MRI using a hybrid denoising generative adversarial network. ISMRM, 2021, program number: 0390.
20. Xu J, Arango N, Liao C, Bilgic B, Zhang Z, Wald LL, **Setsompop K**, Liu H, Stockmann J. Lipid Artifact Removal by Dynamic Shimming (LARDS) with multi-coil Bo shim arrays. ISMRM, 2021, program number: 0782.
21. Yarach U, Godenschweger F, Bernstein M, In MH, Chatnuntawech I, **Setsompop K**, Speck O, Trzasko J. Model-Based Iterative Reconstruction for Short-Axis Propeller EPI at 7T MRI. ISMRM, 2021, program number: 1181.
22. Demir S, Clifford B, Feiweier T, Hilbert T, Hosseini Z, Goncalves Filho AL, Tabari A, Lo WC, Longo MGF, Lev M, Schaefer P, Rapalino O, **Setsompop K**, Bilgic B, Cauley S, Huang S, Conklin J. Optimization of Magnetization Transfer Contrast for EPI FLAIR Brain Imaging. ISMRM, 2021, program number: 4179.
23. In MH, Campeau N, Huston J III, Dong Z, **Setsompop K,** Kang d, Yarach U, Shu Y, Trzasko J, Bernstein M. rapid T2-DIADEM Echo-Planar Imaging as an Alternative to T2-FSE: A Clinical Feasibility Study. ISMRM, 2021, program number: 0838.
24. Polak D, Splitthoff D, Bilgic B, Wald LL, **Setsompop K**, Cauley S. Separable motion estimation and correction for 2D TSE imaging using a rapid 3D volumetric scout acquisition. ISMRM, 2021,

program number: 0124.

25. Tian Q, Li Z, Fan Q, Ngamsombat C, Hu Y, Liao C, Wang F, **Setsompop K**, Polimeni J, Bilgic B, Huang S. SRDTI: Deep learning-based super-resolution for diffusion tensor MRI. ISMRM, 2021, program number: 2446.

VII. Invited Presentations and Courses

Local

No presentations below were sponsored by outside entities.

2012	Efficient Diffusion Imaging Acquisition, Brain-mapping seminar, Athinoula A. Martinos center, MGH, Boston, Massachusetts
2013	Simultaneous MultiSlice techniques for efficient Diffusion and fMRI acquisition, Fetal- Neonatal Neuroimaging & Developmental Science Center (FNNDSC), Boston Children's Hospital, Boston, Massachusetts
2015, 2016, 2017	Advanced MR Imaging: Multi-Channel; Multi-Slice, MGH Radiology resident Noon Lecture series, Boston, Massachusetts
2017	Wave-CAIPI, Pediatric Neuro-Oncology group, Boston Children's Hospital, Boston, Massachusetts
2021	Accelerated MRI through smarter encoding for more speed and more information, Molecular Imaging Program at Stanford (MIPS) Faculty meeting, Stanford, California
2021	RSL overview and Molecular-Neuroimaging related research, Molecular Imaging Program at Stanford (MIPS) mini-retreat, Stanford, California
2021	Efficient encoding approaches for Brain MRI, Stamford Vision Brunch seminar, Department of Psychology, Stanford, California
2021	Advances in Rapid Quantitative MRI; Stanford's NeuroRadiology seminar, Stanford, California
2021	Towards an Era in Precision MRI; Stanford's Radiology faculty meeting, Stanford, California
2021	Towards an Era in Precision MRI; RSL seminar, Stanford, California
2022	MRI acquisition technology for Neuroimaging; Electrical Engineering Faculty meeting, Stanford, California
2022	Biomedical Physics (BMP) introduction to research: MRI acquisition technology for advanced neuroimaging, Radiology, Stanford, California
2023	MRI acquisition technology for Neuroimaging; Radiology Research Mixer: Lucile Packard Children's Hospital, Stanford, California
2022	MRI acquisition technology for Neuroimaging; Stanford Center for Image Systems Engineering (SCIEN) Industry Affiliates Meeting, Stanford, California
2023	MRI technology: RISE (Raising Interest in Science and Engineering) at the Sequoia High School, Redwood City, California
2023	New Directions & Opportunities in Specialized MRI Systems; Radiology-Wide Research meeting, Stanford, California
2023	Biomedical Physics (BMP) introduction to research: MRI acquisition technology for advanced neuroimaging, Radiology, Stanford, California
2023	MRI acquisition technology for Neuroimaging (an update), Electrical Engineering Faculty meeting, Stanford, California
2024	MRI: Clinical Updates and Practical Physics; Stanford Center for Continuing Medical Education (CME). Monterey, CA
2025	Perfecting MRI Imperfections; RSL seminar, Stanford, California

National

No presentations below were sponsored by outside entities.

2010	Simultaneous multi-slice imaging techniques for human brain connectivity mapping, Langone Medical Center, New York University, New York

2015 Advanced Parallel Imaging for high-quality order of magnitude acceleration in MRI brain acquisition, Kennedy Krieger Institute, Johns Hopkins, Baltimore, Maryland

2015 Blipped-CAIPI and Wave-CAIPI: techniques for order of magnitude acceleration in MRI, General Electric research center, Milwaukee, Wisconsin

2015 Advanced Parallel Imaging for brain MRI acquisitions, Medical Imaging Seminar Series, University of Southern California, Los Angeles, California

2015 Technologies for Order of Magnitude Acceleration in MRI brain Acquisitions, Functional Magnetic Resonance Facility (FMRIF), National Institute of Health (NIH), Bethesda, Maryland

2016 Rapid Brain MRI; more speed and more information, University of Southern California, Los Angeles, California

2019 New Directions in MRI through Tailored Acquisitions, Langone Medical Center, New York University, New York City, New York

2019 New Directions in MRI through Tailored Acquisitions, Radiological Sciences Laboratory (RSL), Stanford University, Stanford, California

2020 Fast MR Imaging of the Brain, Annual symposium, UT Southwestern medical center, Dallas, Texas

2021 Emerging fMRI method for improved functional specificity,
NIH BRAIN Workshop: Transformative Non-Invasive Brain Imaging Technologies, online meeting.

2021 Advances in Rapid Quantitative MRI, Annual meeting of the American Society of Functional Neuro-Radiology (ASFNR), Santa Fe, New Mexico

2022 Towards an Era in Precision MRI; fMRI speaker series, University of Michigan, Michigan

2022 Towards an Era in Precision MRI; Magnetic Resonance Research Facility (MRRF) seminar, University of Iowa, online seminar.

2022 Efficient Volumetric and Continuous MRI; Southern California High-Field Low-Field Workshop University of Southern California, Los Angeles, California

2022 Towards Precision mesoscale MRI across the lifespan; Brain Across the Lifespan: Tools and Methodologies for Measuring the Changing Brain Workshop. National Institute of Child Health and Human Development (NICHHD), online seminar

2022 Towards an Era in Precision MRI; Section on Quantitative Imaging and Tissue Sciences (SQITS) seminar, NIH, online seminar

2023 Precision MRI; University of California, San Francisco, San Francisco, California

2023 Precision quantitative MRI on NexGen 7T MRI; University of California, Berkeley, Berkeley, California

2024 Joint Radiology and AIRC Research Grant Round; UT Southwestern Medical Center. Dallas, TX

International

No presentations below were sponsored by outside entities.

2007 High flip angle slice selective Parallel RF Excitation on an 8-channel system at 3T*, (selected from abstracts),* ISMRM annual meeting, Berlin, Germany

2007 In vivo Parallel RF Excitation with B_0 correction, *(selected from abstracts),* ISMRM annual meeting, Berlin, Germany

2007 Sparse spokes slice selective design for B_1 inhomogeneity correction at 7T, *(selected from abstracts),* ISMRM annual meeting, Berlin, Germany

2008 Uniform Wideband Slab Selection with B_1^+ Mitigation at 7T via Parallel Spectral-Spatial Excitation, *(selected from abstracts),* ISMRM annual meeting, Toronto, Ontario, Canada

2009 Design Algorithms for Parallel RF transmission in Magnetic Resonance Imaging; seminar at the Singapore Bioimaging Consortium (SBIC), Singapore

2010 Multislice acquisition via Blipped CAIPIRINHA, Invited talk, FMRIB, Univ. of Oxford, Oxford, UK

2010 Improving SNR per unit time in Diffusion Imaging using a blipped-CAIPIRINHA simultaneous multislice EPI acquisition, *(selected from abstracts),* ISMRM annual meeting, Stockholm,
Sweden

2010 Blipped CAIPIRHINA for simultaneous multi-slice EPI with reduced g-factor penalty*, (selected from abstracts),* ISMRM annual meeting, Stockholm, Sweden

2011 Wave-CAIPIRHINA: a method for reducing g-factors in highly accelerated 3D acquisitions, *(selected from abstracts),* ISMRM annual meeting, Montreal, Canada

2011 Efficient data acquisition in MRI; IEEE section of the Republic of Macedonia, Faculty for Electrical Engineering and Information Technologies, University Ss. Cyril and Methodius, Skopje, Macedonia

2011 Introduction to Diffusion MRI, MR-Balkan, International Society of Magnetic Resonance in Medicine Conference global outreach program, Ohrid, Republic of Macedonia

2012 Efficient data acquisition in MRI, Chiang Mai University, Thailand

2012 Whole-brain DSI in 4 minutes: sparse sampling in q-space with simultaneous multi-slice acquisitions, *(selected from abstracts),* ISMRM annual meeting, Melbourne, Australia

2012 Introduction to Diffusion MRI, MCT 2012, International Society of Magnetic Resonance in Medicine Conference global outreach program, Bangkok, Thailand

2013 Characterization of Artifactual Correlation in Highly-Accelerated Simultaneous Multi-Slice (SMS) fMRI Acquisitions, *(selected from abstracts),* ISMRM annual meeting, Salt Lake City, U.S.A.

2013 fMRI & Diffusion of the Whole Brain at 7T,Invited Talk, ISMRM workshop on Ultra High Field MRI, Noordwijk aan Zee, The Netherlands

2013 Simultaneous MultiSlice acquisition and reconstruction; invited talk at Nijmegen-Maastricht Brain Imaging Symposium, Nijmegan, The Netherlands

2013 Ultra-Fast diffusion and resting-state fMRI imaging with Simultaneous Multi-Slice EPI and Q-space compressed sensing; Invited Talk, International Biomedical and Astronomical Signal Processing (BASP) Frontiers workshop, Switzerland

2013 Accelerated DSI and Efficient Acquisition of MR Connectomics Data, invited talk, Center of Magnetic Resonance Research (CMMR), 9th Biennial Minnesota Workshops on High and Ultra-high Field Imaging, University of Minnesota

2014 Simultaneous MultiSlice Imaging for Rapid fMRI, invited talk, the ISMRM workshop on functional MRI: Emerging techniques and new interpretations, South Carolina

2014 Simultaneous Multi-Slice Acquisition for Connectomic Applications and Beyond; invited talk, Siemens Lunch Symposium, Annual meeting of the Organization of Human Brain Mapping (OHBM), Germany

2014 Parallel Transmission in MRI, and Simultaneous Multi-Slice Acquisition; invited talk, 3rd MR-Balkan Outreach program, International Society of Magnetic Resonance in Medicine Conference global outreach program, Ankara, Turkey

2014 High-speed acquisition of QSM and STI with Wave-CAIPI; invited talk at the 3rd International Workshop on Phase Contrast and Quantitative Susceptibility Mapping (QSM), Duke University, North Carolina

2014 Parallel imaging & Simultaneous Multi-Slice; invited talk at IntelligentMR educational session, Annual meeting of the Medical Image Computation Computer Assist Intervention (MICCAI), Boston

2015 Advanced Parallel Imaging for rapid MRI exam; invited talk at Magnetic Resonance in South East Asia workshop, Singapore

2015	Advanced Parallel Imaging for rapid MRI exam; invited talk at Duke-NUS graduate medical school, Singapore
2015	Wave-CAIPI for an order of magnitude acceleration in MRI acquisition; invited talk at the international biomedical and astronomical signal processing (BASP) Frontiers workshop, Switzerland
2015	SLIce Dithered Enhanced Resolution Simultaneous MultiSlice (SLIDER-SMS) for High Resolution (700 um) Diffusion Imaging of the Human Brain; *(selected from abstracts),* ISMRM annual meeting, Toronto, Canada
2015	Overview of SMS reconstruction; invited talk at ISMRM Workshop on Simultaneous Multi-Slice Imaging: Neuroscience & Clinical Applications, Pacific Grove, U.S.A.
2015	Towards Routine Sub-Millimeter Diffusion Imaging with Slider-SMS; invited talk at ISMRM Workshop on Simultaneous Multi-Slice Imaging: Neuroscience & Clinical Applications, Pacific Grove, U.S.A.
2016	Generalized SLIce Dithered Enhanced Resolution Simultaneous MultiSlice (gSlider-SMS) to increase volume encoding, SNR, and partition profile fidelity in high-resolution diffusion imaging *(selected from abstracts),* ISMRM annual meeting, Singapore
2016	A New Generation of Accelerated Imaging: Smarter Encoding in the Quest for Speed; invited for ISMRM NIBIB New Horizons plenary lecture, ISMRM annual meeting, Singapore
2016	Rapid Brain MRI; more speed and more information; invited talk for the Gordon Research Conference on In Vivo Magnetic Resonance, New Hampshire
2016	Advance in acquisition software and hardware for diffusion imaging; invited talk for Toward a Super-Big Brain Workshop: Promises and Pitfalls of Microstructural Imaging, Montreal, Canada
2016	Rapid Brain MRI; more speed and more information; SFB workshop on Imaging with Modulated/Incomplete Data, Graz, Austria
2017	MRI and the Quest for Speed; invited Plenary lecture for SMRT 26th annual meeting; Hawaii
2017	A new generation of accelerated imaging: smarter encoding in the quest for speed; Invited talk at SKKU-Siemens High-Speed Neuro Imaging Symposium; Seoul, Korea
2017	Pushing the spatial and temporal resolutions of brain MRI; 3rd SIAT MR Workshop in Shenzhen, Shenzhen Institutes of Advanced Technology (SIAT), Chinese Academy of Sciences; China
2017	Prototype to Product (Pathways to Commercialization): Simultaneous MultiSlice EPI with Blipped-CAIPI; ISMRM annual meeting
2018	Efficient dMRI acquisition; invited talk at the Axon diameter diffusion MRI workshop; Paris; France
2019	Fast and better MRI through tailored Undersampling; ISMRM annual meeting.
2019/20/21/22	Toward New directions in MRI through tailored acquisitions; Annual meeting of the Radiological Society of North America (RSNA)
2020	New directions in MRI through tailored acquisitions; invited talk at the Wellcome Centre for Integrative Neuroimaging; Oxford University; U.K. (Virtual)
2021	Towards an Era in Precision MRI; invited talk at the EPFL's Workshop on New Horizons in MRI. (one of six keynote speakers), Switzerland.
2022	Toward mesoscale in vivo diffusion imaging of the human brain; Society for Brain Mapping and Therapeutics (SBMT) Annual Conference, Los Angeles, California, USA
2022	Precision Mesoscale Diffusion MRI; MicroClub monthly virtual seminar,
2022	Towards an Era in Precision MRI; Seoul National University, Korea
2024	Joint Radiology and AIRC Research Grand Round; UT Southwestern Medical Center
2024	Managing Innovation/IP at the interface: A view from Academia; ISMRM annual meeting
2025	Fireside Chat: Handling Disruptions in Imaging & Science, ISMRM diffusion workshop, Kyoto, Japan.
2025	Perfecting MRI imperfections; Leipzig Spin Resonance Colloquium, Max Planck Institute for Human Cognitive and Brain Sciences, Germany.

2026	MRI in the fast lane, ISMRM annual meeting

Those presentations below sponsored by outside entities are so noted and the sponsor appears in parentheses.

2016	Technologies for Order of Magnitude Acceleration in MRI brain Acquisitions, Samsung Healthcare, Seoul, South Korea (SAMSUNG)
2016	Rapid Brain MRI; more speed and more information; invited talk for the Siemens MAGNETOM user meeting at the ISMRM, Singapore (SIEMENS)
2017	Rapid MRI: more speed and more information; Invited talk at Siemens Neurology Symposium; Seoul, Korea (SIEMENS)
2018	Advances in Rapid Neuro MRI; Invited talk at Siemens Magnetom World Summit, Bamberg, Germany (SIEMENS)
2018	Rapid Neuro MRI; invited talk for the Siemens MAGNETOM user meeting at the ISMRM, Paris, France (SIEMENS)
2022	Precision mesoscale diffusion MRI; invited talk for GE summit at the ISMRM, London (GE)
2023	Precision MRI; invited talk at the Ultra High Field workshop, University of Minnesota (Skope)

VIII. Patents

The Blipped-CAIPI method (patent no. 8405395) has been distributed to more than 200 research institutes worldwide for use in fMRI and diffusion imaging studies. GE, Phillips, Siemens, and United Imaging have incorporated this technology into their FDA-approved data acquisition software for all their MRI scanners. Siemens have also released FDA-approved software based on the Wave-CAIPI method (patent no. 8981776), parallel RF transmission method (patent no. 8085044), SMS-EPI dual-polarity calibration (US10175328), and SAMER motion-correction (patent no. 12066513). 14 additional patents have also been licensed by Siemens and United Imaging and are in the process of being incorporated into their product.

Granted patent application (44 granted, plus 18 additional pending)

2008	Patent no. US7336145 *Method for designing RF excitation pulses in magnetic resonance tomography*, Inventors = Zelinski, Adalsteinsson, Setsompop, Wald, Fontius
2011	Patent no. US8076939 *Method for Fast Magnetic Resonance Radiofrequency Coil Transmission Profile Mapping.* Inventors = Setsompop, Alagappan, Adalsteinsson, Wald.
2011	Patent no. US8085044 *Method for producing spectral-spatial parallel RF excitations for magnetic resonance imaging.* Inventors = Setsompop, Alagappan, Gagoski, Wald, Adalsteinsson
2012	Patent no. US8148985 *Method for Reducing Maximum Local Specific Absorption Rate in Magnetic Resonance Imaging*. Inventors = Zelinski, Setsompop, Adalsteinsson, Goyal
2013	Patent no. US8405395 *Method for Simultaneous Multi-slice Magnetic Resonance Imaging*. Inventors = Setsompop, Wald
2014	Patent no. US8866478 *Method and processor and magnetic resonance apparatus for designing RF pulses to mitigate off-resonance effects.* Inventors = Adalsteinsson, Fautz, Setsompop, Wald
2015	Patent no. US8981776 *Method for magnetic resonance imaging with controlled aliasing.* Inventors = Setsompop, Wald
2015	Patent no. US9081055 *Method for Reducing Local Specific Absorption Rate in Magnetic Resonance Imaging Using Radio Frequency Coil Array Dark Modes*. Inventors = Setsompop, Wald
2017	Patent no. US9542763 *Systems and methods for fast reconstruction for Quantitative Susceptibility Mapping using Magnetic Resonance Imaging*. Inventors = Setsompop, Bilgic

2017 Patent no. US9588208 *Methods, systems, and apparatuses for rapid segmented, accelerated, and simultaneous multi-slice echo planar imaging.* Inventors = Polimeni, Bhat, Heberlein, Setsompop, Witzel, Cauley

2017 Patent no. US9778336 *System and method for rapid, multi-shot segmented magnetic resonance imaging*. Inventors = Polimeni, Wald, Setsompop

2017 Patent no. US9778338 *Method for simultaneous multi-slice magnetic resonance imaging*. Inventors = Setsompop, Wald

2018 Patent no. US9897675 *Magnetic resonance fingerprinting (MRF) with simultaneous multivolume acquisition;* Inventors = Setsompop, Griswold, Ye, Wald, Ma, Jiang

2018 Patent no. US9964616 *Fast group matching for magnetic resonance fingerprinting reconstruction;* Inventors = Cauley, Griswold, Setsompop, Wald

2018 Patent no. US10126397 *Systems and methods for fast magnetic resonance image reconstruction using a hierarchically semiseparable solver;* Inventors = Cauley, Bilgic, Setsompop, Wald

2018 Patent no. US10139465 *Method for magnetic resonance imaging with controlled aliasing*; Inventors = Setsompop, Wald

2019 Patent no. US10175328 *System and method for reconstructing ghost-free images from data acquired using simultaneous multislice magnetic resonance imaging*; Inventors = Hoge, Polimeni, Setsompop

2019 Patent no. US10241176 *Systems and methods for statistical reconstruction of magnetic resonance fingerprinting data;* Inventors = Zhao, Setsompop, Wald

2019 Patent no. US10302727 *System and method for high resolution diffusion imaging;* Inventors = Rathi, Ning, Michailovich, Setsompop

2019 Patent no. US10310042 *Hierarchical mapping framework for coil compression in magnetic resonance image reconstruction;* Inventors = Cauley, Polimeni, Setsompop, Wald

2019 Patent no. US10324149 *Systems and methods for generalized slice dithered enhanced resolution magnetic resonance imaging*; Inventors = Setsompop, Stockmann, Wald

2019 Patent no. US10345409 *System and method for simultaneous multislice excitation using combined multiband and periodic slice excitation*; Inventors = Eichner, Wald, Setsompop

2019 Patent no. US10408910 *Systems and methods for joint trajectory and parallel magnetic resonance imaging optimization for auto-calibrated image reconstruction*; Inventors = Cauley, Setsompop, Wald

2019 Patent no. US10429475 *Method for increasing signal-to-noise ratio in magnetic resonance imaging using per-voxel noise covariance regularization*; Inventors = Polimeni, Setsompop, Wald

2019 Patent no. US10436866 *Simultaneous multislice MRI with random gradient encoding;* Inventors = Setsompop, Bilgic, Wald

2020 Patent no. US10598747 *System and method for simultaneous multislice magnetic resonance fingerprinting with variable radio frequency encoding*; Inventors = Gulani, Griswold, Yang, Jiang, Setsompop

2020 Patent no. US10605882 *Systems and methods for removing background phase variations in diffusion-weighted magnetic resonance imaging*; Inventors = Eichner, Setsompop, Wald, Cauley

2020 Patent no. US10871534 *Accelerated magnetic resonance imaging using tilted reconstruction kernel in phase encoded and point spread function encoded k-space*; Inventors = Setsompop, Wald, Dong, Guo, Wang, Reese

2021 Patent no. US10895622 *Noise suppression for wave-CAIPI*; Inventors = Polak, Raithel, Setsompop

2021 Patent no. US10901061 *Accelerated diffusion-weighted magnetic resonance imaging with self-navigated, phase corrected titled kernel reconstruction of phase encode and point spread function encoded k-space*; Inventors = Setsompop, Wald, Dong, Guo, Wang, Reese

2021 Patent no. US10908248 *Systems and methods for slice dithered enhanced resolution simultaneous multislice magnetic resonance imaging*; Inventors = Setsompop, Bilgic, Wald, Witzel

2021 Patent no. US11009575 *Method for simultaneous time-interleaved multislice magnetic resonance imaging*; Inventors = Bilgic Setsompop, Polak, Ye, Wald

2021 Patent no. US11022665 *Method for echo planar time-resolved magnetic resonance imaging*; Inventors = Setsompop, Wald, Wang

2021 Patent no. US 11035920 *Sparse approximate encoding of Wave-CAIPI: preconditioner and noise reduction*; Inventors = Wald, Setsompop, Cauley

2021 Patent no. US11181598 *Multi-contrast MRI image reconstruction using machine learning*; Inventors = Polak, Setsompop

2022 Patent no. US11249162 *Motion corrected blipped CAIPIRINHA and SMS*; Inventors = Splitthoff, Polak, Setsompop, Gagoski

2022 Patent no. US11360176 *Reconstruction of magnetic-resonance datasets using machine learning*; Inventors = Polak, Setsompop

2022 Patent no. US11391803 *Multi-shot echo planar imaging through machine learning*; Inventors = Bilgic, Han, Cauley, Wald, Setsompop

2022 Patent no. US11486953 *Phase estimation for retrospective motion correction*; Inventors = Polak, Setsompop, Cauley

2024 Patent no. US11874353 *Multi-shot echo planar imaging using reordered segments and recursive radio frequency pulse design giving matched slice profiles across segments*; Inventors=Berman, Polimeni, Grissom, Setsompop, Witzel

2024 Patent no. US12066513 *Scout acquisition enables rapid motion estimation and reduction (SAMER) systems and methods for retrospective motion mitigation*; Inventors= Polak, Cauley, Setsompop

2025 Patent number: 12270884 *Lipid suppression in magnetic resonance imaging using multi-coil local B field control*; Inventors= Setsompop, Xu, Stockmann

2025 Patent number: 12345786 *Propeller echo planar time-resolved imaging with dynamic encoding*; Inventors= Fair, Setsompop

2026 Patent number: 12578408 *Autocalibrated multi-shot magnetic resonance image reconstruction with joint optimization of shot-dependent phase and parallel image reconstruction*; Inventors= Cauley, Setsompop, Wald, Bilgic