



Brian A. Hargreaves

Professor of Radiology (Radiological Sciences Laboratory) and, by courtesy, of Electrical Engineering and of Bioengineering

CONTACT INFORMATION

- **Alternate Contact**

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Bio

BIO

Dr. Hargreaves is Professor of Radiology, with a research focus on body magnetic resonance imaging (MRI). He completed his PhD at Stanford University in Electrical Engineering before moving to the Radiology Department in 2005. He directs the Body MRI research group, which develops and implements new MRI techniques with the goal of improving patient care. His group's contributions affect hundreds of patients each year at Stanford and in other imaging centers around the world. In addition to research, Dr. Hargreaves teaches two graduate level courses, and lectures in numerous other courses at Stanford. He is a Fellow of the International Society for Magnetic Resonance in Medicine, where he served as chair of the Web Editorial Board and on the Board of Trustees for 5 years, and Fellow of the American Institute for Medical and Biological Engineering (AIMBE).

ACADEMIC APPOINTMENTS

- Professor, Radiology
- Professor (By courtesy), Bioengineering
- Professor (By courtesy), Electrical Engineering
- Member, Bio-X
- Member, Stanford Cancer Institute

ADMINISTRATIVE APPOINTMENTS

- Associate Chair, Research, Radiology, (2018- present)

HONORS AND AWARDS

- Fellow of the American Institute for Medical and Biological Engineering, AIMBE (Mar 2019)
- Basic Scientist Faculty of the Year, Stanford Radiology (Dec 2018)
- Fellow of the Society of Breast MRI, SBMR (May 2018)
- Fellow of the International Society for Magnetic Resonance in Medicine, ISMRM (June 2015)
- Biodesign Mentorship Award, Stanford Biodesign (June 2015)
- Distinguished Investigator, Association of Radiology Research (Dec 2014)

- John Charnley Award, The Hip Society (Feb 2013)
- Outstanding Teacher Award, ISMRM (May 2013)
- Edward C. Nagy New Investigator, NIH / NIBIB (April 2011)
- Thought Leader Award, GE Healthcare (May 2010)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Editorial Board, Magnetic Resonance in Medicine (2014 - present)
- Board of Trustees, ISMRM (2013 - 2018)
- Chair, Web Editorial Board, ISMRM (2013 - 2018)

PROFESSIONAL EDUCATION

- Ph.D., Stanford University , Electrical Engineering (2001)
- M.S., Stanford University , Electrical Engineering (1997)
- B.A.Sc, Simon Fraser University , Engineering Science (1994)

LINKS

- Research Group: Body MRI: <http://med.stanford.edu/bmrgroup>
- IMMERS AR/VR Group: <http://immers.stanford.edu>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

I am interested in magnetic resonance imaging (MRI) applications and augmented reality applications in medicine. These include abdominal, breast and musculoskeletal imaging, which require development of faster, quantitative, and more efficient MRI methods that provide improved diagnostic contrast compared with current methods. My work includes novel excitation schemes, efficient imaging methods and reconstruction tools and augmented reality in medicine.

CLINICAL TRIALS

- Magnetic Resonance Imaging of Breast Cancer, Recruiting
- High Resolution 3D Diffusion-weighted Breast MRI, Not Recruiting

Teaching

COURSES

2021-22

- Magnetic Resonance Imaging Programming Topics: RAD 228 (Spr)
- Mixed-Reality in Medicine: RAD 206 (Aut)

2020-21

- MRI Sequences and Signals: RAD 229 (Spr)

2019-20

- MRI Sequences and Signals: RAD 229 (Spr)
- Magnetic Resonance Imaging Programming Topics: RAD 228 (Spr)

2018-19

- MRI Sequences and Signals: RAD 229 (Aut)

- Magnetic Resonance Imaging Programming Topics: RAD 228 (Spr)
- Mixed-Reality in Medicine: RAD 206 (Aut)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Cagan Alkan, Hollis Crowder, Phillip DiGiacomo

Postdoctoral Faculty Sponsor

Marianne Black, Jun Ma, Jessica McKay-Nault

Doctoral Dissertation Advisor (AC)

Jeremiah Hess, Philip Lee, Alexander Toews

Doctoral (Program)

Trishia El Chemaly

Publications

PUBLICATIONS

- **Biopsy Marker Localization with Thermo-Acoustic Ultrasound for Lumpectomy Guidance.** *Medical physics*
Dixit, N., Daniel, B. L., Hargreaves, B. A., Pauly, J. M., Scott, G. C.
2021
- **Clinical utility of accelerated MAVRIC-SL with robust-PCA compared to conventional MAVRIC-SL in evaluation of total hip arthroplasties.** *Skeletal radiology*
Doyle, Z., Yoon, D., Lee, P. K., Rosenberg, J., Hargreaves, B. A., Beaulieu, C. F., Stevens, K. J.
2021
- **Zero echo time pediatric musculoskeletal magnetic resonance imaging: initial experience.** *Pediatric radiology*
Sandberg, J. K., Young, V. A., Yuan, J., Hargreaves, B. A., Wishah, F., Vasanaawala, S. S.
2021
- **Non-contrast MRI of synovitis in the knee using quantitative DESS.** *European radiology*
Thoenen, J., Stevens, K. J., Turmezei, T. D., Chaudhari, A., Watkins, L. E., McWalter, E. J., Hargreaves, B. A., Gold, G. E., MacKay, J. W., Kogan, F.
2021
- **The International Workshop on Osteoarthritis Imaging Knee MRI Segmentation Challenge: A Multi-Institute Evaluation and Analysis Framework on a Standardized Dataset.** *Radiology. Artificial intelligence*
Desai, A. D., Caliva, F., Iriondo, C., Mortazi, A., Jambawalikar, S., Bagci, U., Perslev, M., Igel, C., Dam, E. B., Gaj, S., Yang, M., Li, X., Deniz, et al
2021; 3 (3): e200078
- **Detection of knee synovitis using non-contrast-enhanced qDESS compared with contrast-enhanced MRI.** *Arthritis research & therapy*
de Vries, B. A., Breda, S. J., Sveinsson, B., McWalter, E. J., Meuffels, D. E., Krestin, G. P., Hargreaves, B. A., Gold, G. E., Oei, E. H.
2021; 23 (1): 55
- **Characterizing the transient response of knee cartilage to running: Decreases in cartilage T2 of female recreational runners.** *Journal of orthopaedic research : official publication of the Orthopaedic Research Society*
Crowder, H. A., Mazzoli, V. n., Black, M. S., Watkins, L. E., Kogan, F. n., Hargreaves, B. A., Levenston, M. E., Gold, G. E.
2021
- **Diffusion Tensor Imaging of Skeletal Muscle Contraction Using Oscillating Gradient Spin Echo.** *Frontiers in neurology*
Mazzoli, V. n., Moulin, K. n., Kogan, F. n., Hargreaves, B. A., Gold, G. E.
2021; 12: 608549
- **Multishot Diffusion-Weighted MRI of the Breast With Multiplexed Sensitivity Encoding (MUSE) and Shot Locally Low-Rank (Shot-LLR) Reconstructions.** *Journal of magnetic resonance imaging : JMIR*

- Hu, Y., Ikeda, D. M., Pittman, S. M., Samarawickrama, D., Guidon, A., Rosenberg, J., Chen, S., Okamoto, S., Daniel, B. L., Hargreaves, B. A., Moran, C. J.
2020
- **A MULTI-INSTITUTE AUTOMATED SEGMENTATION EVALUATION ON A STANDARD DATASET: FINDINGS FROM THE INTERNATIONAL WORKSHOP ON OSTEOARTHRITIS IMAGING SEGMENTATION CHALLENGE**
Desai, A., Caliva, F., Iriondo, C., Khosravan, N., Mortazi, A., Jambawalikar, S., Torigian, D., Ellermann, J., Akcakaya, M., Bagci, U., Tibrewala, R., Flament, I., O'Brian, et al
ELSEVIER SCI LTD.2020: S304–S305
 - **APPLICATIONS OF RAPID MRI, HOW TO IMPROVE PATIENT CARE**
Hargreaves, B. A.
ELSEVIER SCI LTD.2020: S15–S16
 - **AN INTER-VENDOR STUDY OF SCAN-RESCAN AND LEFT-RIGHT KNEE ASYMMETRY VARIABILITY OF CARTILAGE T2 TRANSVERSE RELAXATION TIME AND MORPHOMETRY ASSESSED SIMULTANEOUSLY USING A SINGLE RAPID 4-MINUTE MRI SCAN**
Chaudhari, A. S., Lu, Q., Wisser, A., Wirth, W., Gold, G. E., Hargreaves, B. A., Eckstein, F.
ELSEVIER SCI LTD.2020: S269–S270
 - **Diffusion-weighted double-echo steady-state with a three-dimensional cones trajectory for non-contrast-enhanced breast MRI.** *Journal of magnetic resonance imaging : JMRI*
Moran, C. J., Cheng, J. Y., Sandino, C. M., Carl, M. n., Alley, M. T., Rosenberg, J. n., Daniel, B. L., Pittman, S. M., Rosen, E. L., Hargreaves, B. A.
2020
 - **Comparison of head pose tracking methods for mixed-reality neuronavigation for transcranial magnetic stimulation** *SPIE Medical Imaging*
Sathyanarayana, S., Leuze, C., Hargreaves, B., Daniel, B. L., Wetzstein, G., Etkin, A., Bhati, M. T., McNab, J. A.
2020
 - **Diagnostic Accuracy of Quantitative Multi-Contrast 5-Minute Knee MRI Using Prospective Artificial Intelligence Image Quality Enhancement.** *AJR. American journal of roentgenology*
Chaudhari, A. S., Grissom, M. J., Fang, Z. n., Sveinsson, B. n., Lee, J. H., Gold, G. E., Hargreaves, B. A., Stevens, K. J.
2020
 - **Near-Silent and Distortion-Free Diffusion MRI in Pediatric Musculoskeletal Disorders: Comparison With Echo Planar Imaging Diffusion.** *Journal of magnetic resonance imaging : JMRI*
Sandberg, J. K., Young, V. A., Syed, A. B., Yuan, J. n., Hu, Y. n., Sandino, C. n., Menini, A. n., Hargreaves, B. n., Vasawala, S. n.
2020
 - **Diagnosis and Successful Management of an Unusual Presentation of Chronic Foot Pain Using Positron Emission Tomography/Magnetic Resonance Imaging and a Simple Surgical Procedure** *CLINICAL JOURNAL OF SPORT MEDICINE*
Cipriano, P., Yoon, D., Holley, D., Hargreaves, B., Carroll, I., Curtin, C., Biswal, S.
2020; 30 (1): E11–E14
 - **A Patient-Specific Mixed-Reality Visualization Tool for Thoracic Surgical Planning.** *The Annals of thoracic surgery*
Perkins, S. L., Krajancich, B. n., Jeffrey Yang, C. F., Hargreaves, B. A., Daniel, B. L., Berry, M. F.
2020
 - **Utilizing shared information between gradient-spoiled and RF-spoiled steady-state MRI signals.** *Physics in medicine and biology*
Sveinsson, B. n., Gold, G. E., Hargreaves, B. A., Yoon, D. n.
2020
 - **Prospective Deployment of Deep Learning in MRI: A Framework for Important Considerations, Challenges, and Recommendations for Best Practices.** *Journal of magnetic resonance imaging : JMRI*
Chaudhari, A. S., Sandino, C. M., Cole, E. K., Larson, D. B., Gold, G. E., Vasawala, S. S., Lungren, M. P., Hargreaves, B. A., Langlotz, C. P.
2020
 - **RUN-UP: Accelerated multishot diffusion-weighted MRI reconstruction using an unrolled network with U-Net as priors.** *Magnetic resonance in medicine*
Hu, Y. n., Xu, Y. n., Tian, Q. n., Chen, F. n., Shi, X. n., Moran, C. J., Daniel, B. L., Hargreaves, B. A.
2020
 - **Time-saving opportunities in knee osteoarthritis: T2 mapping and structural imaging of the knee using a single 5-min MRI scan.** *European radiology*
Eijgenraam, S. M., Chaudhari, A. S., Reijman, M., Bierma-Zeinstra, S. M., Hargreaves, B. A., Runhaar, J., Heijboer, F. W., Gold, G. E., Oei, E. H.

2019

- **Rapid Knee MRI Acquisition and Analysis Techniques for Imaging Osteoarthritis.** *Journal of magnetic resonance imaging : JMRI*
Chaudhari, A. S., Kogan, F., Pedoia, V., Majumdar, S., Gold, G. E., Hargreaves, B. A.
2019
- **Does Injection of Hyaluronic Acid Protect Against Early Cartilage Injury Seen After Marathon Running? A Randomized Controlled Trial Utilizing High-Field Magnetic Resonance Imaging.** *The American journal of sports medicine*
Nathani, A., Gold, G. E., Monu, U., Hargreaves, B., Finlay, A. K., Rubin, E. B., Safran, M. R.
2019: 363546519879138
- **Utility of deep learning super-resolution in the context of osteoarthritis MRI biomarkers.** *Journal of magnetic resonance imaging : JMRI*
Chaudhari, A. S., Stevens, K. J., Wood, J. P., Chakraborty, A. K., Gibbons, E. K., Fang, Z., Desai, A. D., Lee, J. H., Gold, G. E., Hargreaves, B. A.
2019
- **Combined 5-minute double-echo in steady-state with separated echoes and 2-minute proton-density-weighted 2D FSE sequence for comprehensive whole-joint knee MRI assessment** *JOURNAL OF MAGNETIC RESONANCE IMAGING*
Chaudhari, A. S., Stevens, K. J., Sveinsson, B., Wood, J. P., Beaulieu, C. F., Oei, E. G., Rosenberg, J. K., Kogan, F., Alley, M. T., Gold, G. E., Hargreaves, B. A.
2019; 49 (7): E183–E194
- **Flexible and efficient optimization of quantitative sequences using automatic differentiation of Bloch simulations.** *Magnetic resonance in medicine*
Lee, P. K., Watkins, L. E., Anderson, T. I., Buonincontri, G., Hargreaves, B. A.
2019
- **Accelerated imaging of metallic implants using model-based nonlinear reconstruction** *MAGNETIC RESONANCE IN MEDICINE*
Shi, X., Levine, E., Weber, H., Hargreaves, B. A.
2019; 81 (4): 2247–63
- **Diagnosis and Successful Management of an Unusual Presentation of Chronic Foot Pain Using Positron Emission Tomography/Magnetic Resonance Imaging and a Simple Surgical Procedure.** *Clinical journal of sport medicine : official journal of the Canadian Academy of Sport Medicine*
Cipriano, P. W., Yoon, D., Holley, D., Hargreaves, B. A., Carroll, I. R., Curtin, C. M., Biswal, S.
2019
- **Motion-robust reconstruction of multishot diffusion-weighted images without phase estimation through locally low-rank regularization** *MAGNETIC RESONANCE IN MEDICINE*
Hu, Y., Levine, E. G., Tian, Q., Moran, C. J., Wang, X., Taviani, V., Vasanaawala, S. S., McNab, J. A., Daniel, B. L., Hargreaves, B. A.
2019; 81 (2): 1181–90
- **Breast dispersion imaging using undersampled rapid dynamic contrast-enhanced MRI**
Shi, L., Srinivasan, S., Hargreaves, B., Daniel, B., Mori, K., Hahn, H. K.
SPIE-INT SOC OPTICAL ENGINEERING.2019
- **Multi-shot diffusion-weighted MRI reconstruction with magnitude-based spatial-angular locally low-rank regularization (SPA-LLR).** *Magnetic resonance in medicine*
Hu, Y. n., Wang, X. n., Tian, Q. n., Yang, G. n., Daniel, B. n., McNab, J. n., Hargreaves, B. n.
2019
- **Near-silent distortionless DWI using magnetization-prepared RUFIS.** *Magnetic resonance in medicine*
Yuan, J. n., Hu, Y. n., Menini, A. n., Sandino, C. M., Sandberg, J. n., Sheth, V. n., Moran, C. J., Alley, M. n., Lustig, M. n., Hargreaves, B. n., Vasanaawala, S. n.
2019
- **Combined 5-minute double-echo in steady-state with separated echoes and 2-minute proton-density-weighted 2D FSE sequence for comprehensive whole-joint knee MRI assessment.** *Journal of magnetic resonance imaging : JMRI*
Chaudhari, A. S., Stevens, K. J., Sveinsson, B., Wood, J. P., Beaulieu, C. F., Oei, E. H., Rosenberg, J. K., Kogan, F., Alley, M. T., Gold, G. E., Hargreaves, B. A.
2018
- **Accelerated imaging of metallic implants using model-based nonlinear reconstruction.** *Magnetic resonance in medicine*
Shi, X., Levine, E., Weber, H., Hargreaves, B. A.
2018
- **View-Sharing Artifact Reduction With Retrospective Compressed Sensing Reconstruction in the Context of Contrast-Enhanced Liver MRI for Hepatocellular Carcinoma (HCC) Screening.** *Journal of magnetic resonance imaging : JMRI*

- Shaikh, J., Stoddard, P. B., Levine, E. G., Roh, A. T., Saranathan, M., Chang, S. T., Muellly, M. C., Hargreaves, B. A., Vasanaawala, S. S., Loening, A. M.
2018
- **Motion-robust reconstruction of multishot diffusion-weighted images without phase estimation through locally low-rank regularization.** *Magnetic resonance in medicine*
Hu, Y., Levine, E. G., Tian, Q., Moran, C. J., Wang, X., Taviani, V., Vasanaawala, S. S., McNab, J. A., Daniel, B. A., Hargreaves, B. L.
2018
 - **Fast Intensity Non-Uniformity Correction for MR Images Using Sparse Samples**
Shi, L., Perkins, S., Moran, C., Hargreaves, B., Daniel, B.
WILEY.2018: E360
 - **Internal Breast Tumor Heterogeneity On T2-Weighted Imaging: Double Echo Steady State(DESS) Versus 3D Fast Spin Echo (CUBE)**
Shi, L., Alley, M., Hargreaves, B., Daniel, B., Moran, C.
WILEY.2018: E192
 - **Super-resolution musculoskeletal MRI using deep learning.** *Magnetic resonance in medicine*
Chaudhari, A. S., Fang, Z., Kogan, F., Wood, J., Stevens, K. J., Gibbons, E. K., Lee, J. H., Gold, G. E., Hargreaves, B. A.
2018
 - **Accelerated three-dimensional multispectral MRI with robust principal component analysis for separation of on- and off-resonance signals** *MAGNETIC RESONANCE IN MEDICINE*
Levine, E., Stevens, K., Beaulieu, C., Hargreaves, B.
2018; 79 (3): 1495–1505
 - **On-the-Fly Adaptive k-Space Sampling for Linear MRI Reconstruction Using Moment-Based Spectral Analysis** *IEEE TRANSACTIONS ON MEDICAL IMAGING*
Levine, E., Hargreaves, B.
2018; 37 (2): 557–67
 - **Fat-based registration of breast dynamic contrast enhanced water images.** *Magnetic resonance in medicine*
Srinivasan, S. n., Hargreaves, B. A., Daniel, B. L.
2018; 79 (4): 2408–14
 - **Deep Learning Super-Resolution Enables Rapid Simultaneous Morphological and Quantitative Magnetic Resonance Imaging**
Chaudhari, A., Fang, Z., Lee, J., Gold, G., Hargreaves, B., Knoll, F., Maier, A., Rueckert, D.
SPRINGER INTERNATIONAL PUBLISHING AG.2018: 3–11
 - **SNR-weighted regularization of ADC estimates from double-echo in steady-state (DESS).** *Magnetic resonance in medicine*
Sveinsson, B. n., Gold, G. E., Hargreaves, B. A., Yoon, D. n.
2018
 - **Mixed-reality guidance for brain stimulation treatment of depression**
Leuze, C., Yang, G., Hargreaves, B., Daniel, B., McNab, J. A., IEEE
IEEE.2018: 377–80
 - **Quantitative imaging of bone-cartilage interactions in ACL-injured patients with PET-MRI.** *Osteoarthritis and cartilage*
Kogan, F. n., Fan, A. P., Monu, U. n., Iagaru, A. n., Hargreaves, B. A., Gold, G. E.
2018
 - **Imaging of magnetic ink patterns via off-resonance sensitivity.** *Magnetic resonance in medicine*
Perkins, S. L., Daniel, B. L., Hargreaves, B. A.
2018
 - **The impact of computed high b-value images on the diagnostic accuracy of DWI for prostate cancer: A receiver operating characteristics analysis.** *Scientific reports*
Ning, P. n., Shi, D. n., Sonn, G. A., Vasanaawala, S. S., Loening, A. M., Ghanouni, P. n., Obara, P. n., Shin, L. K., Fan, R. E., Hargreaves, B. A., Daniel, B. L.
2018; 8 (1): 3409
 - **Artifact-reduced imaging of biopsy needles with 2D multispectral imaging.** *Magnetic resonance in medicine*
Weber, H. n., Hargreaves, B. A., Daniel, B. L.

2018; 80 (2): 655–61

- **Simultaneous bilateral-knee MR imaging.** *Magnetic resonance in medicine*
Kogan, F. n., Levine, E. n., Chaudhari, A. S., Monu, U. D., Epperson, K. n., Oei, E. H., Gold, G. E., Hargreaves, B. A.
2018; 80 (2): 529–37
- **MRI monitoring of focused ultrasound sonications near metallic hardware.** *Magnetic resonance in medicine*
Weber, H. n., Ghanouni, P. n., Pascal-Tenorio, A. n., Pauly, K. B., Hargreaves, B. A.
2018; 80 (1): 259–71
- **Anatomical Road Mapping Using CT and MR Enterography for Ultrasound Molecular Imaging of Small Bowel Inflammation in Swine.** *European radiology*
Wang, H. n., Felt, S. A., Guracar, I. n., Taviani, V. n., Zhou, J. n., Sigrist, R. M., Zhang, H. n., Liau, J. n., Vilches-Moure, J. G., Tian, L. n., Saenz, Y. n., Bettinger, T. n., Hargreaves, et al
2018; 28 (5): 2068–76
- **Five-minute knee MRI for simultaneous morphometry and T2 relaxometry of cartilage and meniscus and for semiquantitative radiological assessment using double-echo in steady-state at 3T.** *Journal of magnetic resonance imaging : JMRI*
Chaudhari, A. S., Black, M. S., Eijgenraam, S. n., Wirth, W. n., Maschek, S. n., Sveinsson, B. n., Eckstein, F. n., Oei, E. H., Gold, G. E., Hargreaves, B. A.
2018; 47 (5): 1328–41
- **Mitigation of near-band balanced steady-state free precession through-plane flow artifacts using partial dephasing.** *Magnetic resonance in medicine*
Datta, A. n., Cheng, J. Y., Hargreaves, B. A., Baron, C. A., Nishimura, D. G.
2018; 79 (6): 2944–53
- **Self-Calibrating Wave-Encoded Variable-Density Single-Shot Fast Spin Echo Imaging.** *Journal of magnetic resonance imaging : JMRI*
Chen, F. n., Taviani, V. n., Tamir, J. I., Cheng, J. Y., Zhang, T. n., Song, Q. n., Hargreaves, B. A., Pauly, J. M., Vasanawala, S. S.
2018; 47 (4): 954–66
- **Automatic renal segmentation for MR urography using 3D-GrabCut and random forests.** *Magnetic resonance in medicine*
Yoruk, U. n., Hargreaves, B. A., Vasanawala, S. S.
2018; 79 (3): 1696–1707
- **Metallic Implant Geometry and Susceptibility Estimation Using Multispectral B-0 Field Maps** *MAGNETIC RESONANCE IN MEDICINE*
Shi, X., Yoon, D., Koch, K. M., Hargreaves, B. A.
2017; 77 (6): 2402-2413
- **Multispectral diffusion-weighted imaging near metal implants.** *Magnetic resonance in medicine*
Koch, K. M., Bhave, S., Gaddipati, A., Hargreaves, B. A., Gui, D., Peters, R., Bedi, M., Mannem, R., Kaushik, S. S.
2017
- **3D Cartesian MRI with compressed sensing and variable view sharing using complementary poisson-disc sampling** *MAGNETIC RESONANCE IN MEDICINE*
Levine, E., Daniel, B., Vasanawala, S., Hargreaves, B., Saranathan, M.
2017; 77 (5): 1774-1785
- **Resolving phase ambiguity in dual-echo dixon imaging using a projected power method** *MAGNETIC RESONANCE IN MEDICINE*
Zhang, T., Chen, Y., Bao, S., Alley, M. T., Pauly, J. M., Hargreaves, B. A., Vasanawala, S. S.
2017; 77 (5): 2066-2076
- **A simple analytic method for estimating T2 in the knee from DESS** *MAGNETIC RESONANCE IMAGING*
Sveinsson, B., Chaudhari, A. S., Gold, G. E., Hargreaves, B. A.
2017; 38: 63-70
- **2D multi-spectral imaging for fast MRI near metal.** *Magnetic resonance in medicine*
Hargreaves, B. A., Taviani, V., Litwiller, D. V., Yoon, D.
2017
- **Cluster analysis of quantitative MRI T-2 and T-1 rho relaxation times of cartilage identifies differences between healthy and ACL-injured individuals at 3T** *OSTEOARTHRITIS AND CARTILAGE*
Monu, U. D., Jordan, C. D., Samuelson, B. L., Hargreaves, B. A., Gold, G. E., McWalter, E. J.

2017; 25 (4): 513-520

- **Improved field-mapping and artifact correction in multispectral imaging.** *Magnetic resonance in medicine*
Quist, B., Shi, X., Weber, H., Hargreaves, B. A.
2017
- **Volumetric Multislice GagCEST Imaging of Articular Cartilage: Optimization and Comparison With T1rho** *MAGNETIC RESONANCE IN MEDICINE*
Kogan, F., Hargreaves, B. A., Gold, G. E.
2017; 77 (3): 1134-1141
- **MR Thermometry Near Metallic Devices Using Multispectral Imaging** *MAGNETIC RESONANCE IN MEDICINE*
Weber, H., Taviani, V., Yoon, D., Ghanouni, P., Pauly, K. B., Hargreaves, B. A.
2017; 77 (3): 1162-1169
- **connective tissues in the knee using ultrashort echo-time double-echo steady-state (UTEDESS).** *Magnetic resonance in medicine*
Chaudhari, A. S., Sveinsson, B., Moran, C. J., McWalter, E. J., Johnson, E. M., Zhang, T., Gold, G. E., Hargreaves, B. A.
2017
- **High-resolution diffusion-weighted imaging of the breast with multiband 2D radiofrequency pulses and a generalized parallel imaging reconstruction** *MAGNETIC RESONANCE IN MEDICINE*
Taviani, V., Alley, M. T., Banerjee, S., Nishimura, D. G., Daniel, B. L., Vasanaawala, S. S., Hargreaves, B. A.
2017; 77 (1): 209-220
- **A Mixed-Reality System for Breast Surgical Planning**
Perkins, S. L., Lin, M. A., Srinivasan, S., Wheeler, A. J., Hargreaves, B. A., Daniel, B. L., Broll, W., Regenbrecht, H., Swan, J. E., Bruder, G., Servieres, M., Sugimoto, M.
IEEE.2017: 269-74
- **Feasibility of 7T MRI for Imaging Fascicular Structures of Peripheral Nerves.** *Muscle & nerve*
Yoon, D. n., Biswal, S. n., Rutt, B. n., Lutz, A. n., Hargreaves, B. n.
2017
- **18F-FDG PET/MRI in Chronic Sciatica: Early Results Revealing Spinal and Non-spinal Abnormalities.** *Journal of nuclear medicine : official publication, Society of Nuclear Medicine*
Cipriano, P. n., Yoon, D. n., Gandhi, H. n., Holley, D. n., Thakur, D. n., Ith, M. n., Hargreaves, B. n., Kennedy, D. n., Smuck, M. n., Cheng, I. n., Biswal, S. n.
2017
- **Relative value of three whole-body MR approaches for PET-MR, including gadofosveset-enhanced MR, in comparison to PET-CT.** *Clinical imaging*
Obara, P. n., Loening, A. n., Taviani, V. n., Jagaru, A. n., Hargreaves, B. A., Vasanaawala, S. n.
2017; 48: 62-68
- **Cluster analysis of quantitative MRI T2 and T1? relaxation times of cartilage identifies differences between healthy and ACL-injured individuals at 3T.** *Osteoarthritis and cartilage*
Monu, U. D., JORDAN, C. D., Samuelson, B. L., Hargreaves, B. A., Gold, G. E., McWalter, E. J.
2016
- **A semiflexible 64-channel receive-only phased array for pediatric body MRI at 3T.** *Magnetic resonance in medicine*
Zhang, T., Grafendorfer, T., Cheng, J. Y., Ning, P., Rainey, B., Giancola, M., Ortman, S., Robb, F. J., Calderon, P. D., Hargreaves, B. A., Lustig, M., Scott, G. C., Pauly, et al
2016; 76 (3): 1015-1021
- **field maps.** *Magnetic resonance in medicine*
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