

Ryan Brown

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EDUCATION

- 2002 Bachelor of Science in Electrical Engineering
Arizona State University
- 2008 Doctor of Philosophy in Physiology, Biophysics and Systems Biology
Cornell University – Weill Graduate School of Medical Sciences

PROFESSIONAL POSITIONS

- 2008 – 2013 Research Engineer, Department of Radiology, Center for Biomedical Imaging
New York University School of Medicine
- 2012 – Present Faculty, NYU WIRELESS
Brooklyn Polytechnic Institute of New York University
- 2013 – Present Assistant Professor, Department of Radiology, Center for Biomedical Imaging
New York University School of Medicine

PROFESSIONAL MEMBERSHIPS

- 2002 – Present Institute of Electrical and Electronics Engineers
- 2004 – Present International Society for Magnetic Resonance in Medicine
- 2012 – Present New York University Fossil Fuel Divestment

HONORS AND AWARDS

- 2002 Tau Beta Pi, Arizona Beta Chapter – The National Engineering Honor Society
- 2012 Summa Cum Laude Award – International Society for Magnetic Resonance in Medicine
- 2015 Distinguished Journal Reviewer – Magnetic Resonance in Medicine
- 2016 Second Place Presentation, Detection and Correction of Motion in MRI and MRS Study Group – International Society for Magnetic Resonance in Medicine

EDITORIAL POSITIONS

- 2011 – Present Ad Hoc Reviewer Magnetic Resonance in Medicine
- 2012 – Present Ad Hoc Reviewer European Radiology
- 2013 – Present Ad Hoc Reviewer Journal of Magnetic Resonance Imaging
- 2014 – Present Ad Hoc Reviewer IEEE Transactions on Biomedical Engineering
- 2014 – Present Ad Hoc Reviewer PLoS One
- 2014 Grant Reviewer Mitacs Elevate
- 2014, 2015, 2016 Abstract Reviewer International Society for Magnetic Resonance in Medicine
- 2015 Ad Hoc Reviewer NMR in Biomedicine
- 2015 Ad Hoc Reviewer Journal of Magnetic Resonance

TEACHING EXPERIENCE

- 2011 – Present Laboratory Instructor for *Practical MRI I* (New York University, Sackler graduate course)

COMMITTEES

- 2011 – Present Coil Safety Committee, New York University Center for Biomedical Imaging

RESEARCH INTERESTS

1. Radiofrequency coil design for proton and multi-nuclear (primarily ^{31}P and ^{23}Na) MRI.
2. Metabolic sodium MRI to monitor breast cancer during neoadjuvant chemotherapy for tailored patient treatment
3. Parallel transmission and coil development strategies for 7 Tesla MRI.

FUNDING

--- CURRENT ---

1. Role: Co-Investigator. *Multinuclear MRI Assessment of Diabetic, Peripheral Neuropathy 1R01DK106292-01* (PI: P. Parasoglou) NIH, 07/01/15 –04/30/19. In this study we will test whether co-localized high-resolution phosphorus and BOLD MRI measurements in lower leg muscles of type 2 diabetic patients can detect presence and severity of diabetic peripheral neuropathy (DPN), and whether these two techniques combined, can predict the onset of diabetic foot ulcers.
2. Role: Co-Investigator. *Assessment of Cartilage Repair with Sodium MRI at 3T 1R01AR067156-01* (PI: R. Regatte). NIH, 02/06/15 - 11/30/19. The proposal will establish a powerful non-invasive imaging biomarker based on development of new hardware (flexible dual tuned knee array) and software (3D-FLORET sodium - MRI) that is clinically useful for assessment of cartilage repair procedures.
3. Role: Co-Investigator. *Center for Advanced Imaging Innovation and Research. 1P41EB017183-01A1*. (PI: D. Sodickson) NIH, 09/30/14 - 07/31/19. The proposed BTRC combines three areas of novel and high-impact imaging technology development with a unique new model for interdepartmental and academic-industrial collaboration aimed at translating that technology rapidly and effectively into clinical practice.
4. Role: Staff. *Improved Safety and Efficiency of Image-Guided Procedures*. Applied Research Support Fund. (PI: T. Shepherd). This proposal focuses on two simple, intuitive modifications to medical devices to make image-guided interventions much safer and more efficient.

--- EXPIRED ---

5. Role: Co-Investigator. *RF Technology Innovation for Advancing High Field MR. 5R01EB011551-04* (PI: C. Collins), NIH/NIBIB, 02/01/11 - 07/31/15. The goal of this project is to significantly improve human high field MR safety and capability by establishing clinically practicable methods for spin excitation, RF apparatus and SAR management.
6. Role: Co-Investigator. *High-Performance High-Field Parallel MRI. 2R01EB002568-07A1* (PI: D. Sodickson), NIH/NIBIB, 09/01/03 - 06/30/15. In this continuing project, our team aims to develop and deploy novel remote encircling many-element transmitter and detector array structures for high-performance high-field magnetic resonance imaging.
7. Role: Co-Investigator. *Serial Brain 3D 1H MR Spectroscopy in Multiple Sclerosis. 2R56NS050520-06A1* (PI: O. Gonen), NIH/NINDS, 09/01/05 - 08/31/12. The major goals of this project are: 1) Follow local neuronal injury with high-resolution 1H-MRS; and 2) assessment global NAA loss as a marker for whole-brain axonal and neuronal injury or dysfunction; 3) assessment of clinical disability; and 4) correlation of these measures in a cohort of 25 MS patients versus their matched 25 normal controls.

SERVICES

1. Key member of the RF core laboratory – lab infrastructure and hardware development for NYU investigators
 - a. Eight-channel parallel transmit interface for Step II Siemens 7T system
 - b. 32-channel parallel transmit interface and coil
 - c. Trio to Prisma x-nuclei adapter
 - d. MRI-compatible ergometer for quantifiable pedal flexion
 - e. 36 and 18-channel trouble-shooting test fixtures for coils designed for the Siemens Trio platform
 - f. Floating cable traps for bundled (Odu) and RG/59 coaxial cables
 - g. Service of our in-house LPKF and T-Tech circuit board routing machines
2. Design and manufacture of 3D printed MRI devices and service/maintenance of our in-house Fortus 360mc device

- a. Initiated a billable printing service for inter-departmental jobs
 - b. Developed Matlab script to segment MRI images for anatomically-realistic printed models
 - c. 3D modeling of MRI interfaces (pTx, x-nuclei adapter, ex vivo brain fixture) that seamlessly integrate with Siemens patient tables
 - d. Solidworks software licensing maintenance and support
3. Development of a phantom recipe that replicates the dielectric properties of various tissues
<https://amri.ninds.nih.gov/cgi-bin/phantomrecipe>

PATENTS

1. R. Brown, Y. Wang. "Dual Lower Extremity MRI Coil Array," US Patent, 12/548,172, 2009.
2. G.C. Wiggins, R. Brown. "Multi-Nuclei MRI Coil," US Patent. 13/866,728, 2013.
3. R. Brown, M.A. Cloos, G.C. Wiggins. "Split-Symmetric Parallel Transmission System," US Provisional Patent Application, 61/983,933, 2014.

INVITED LECTURES

1. New York University Medical Center, *Best in Practice: Fetal MRI*, "SAR Fundamentals and Practical Considerations for Fetal MRI," 2011.
2. New York University Medical Center, *Clinical State of the Art Body MRI, Continuing Education*, "Your Coils and You: A Buyer's and User's Guide to MR Equipment," 2011.
3. New York University Medical Center, *Research Forum*, "Adventures in 3D Printing," 2013.
4. New York University Medical Center, *Introduction to Radiology Research Forum*, "Multi-nuclear MRI Coils and Applications," 2015.
5. International Society for Magnetic Resonance in Medicine, *educational session*, "Multi-tuned RF Coils," 2015.
6. International Society for Magnetic Resonance in Medicine, *educational session*, "Multi-tuned RF Coils," 2016.
7. New York University, *Advanced MRI*, graduate course seminar, "X-nuclei imaging," 2016.

PUBLICATIONS – PEER REVIEWED ARTICLES

1. R. Brown, O. Khagai, P. Parasoglou. "Magnetic Resonance of Phosphocreatine and BOLD Kinetics in the Lower Extremities with a Dual-Frequency Coil Array," *Scientific Reports*, 2016; 6: 30568.
2. R. Brown, K. Lakshmanan, G. Madelin, P. Parasoglou. "A Nested Phosphorus and Proton Coil Array for Brain MR Imaging and Spectroscopy," *NeuroImage*, 2016 Jan; 124: 602-611.
3. R. Brown, K. Lakshmanan, G. Madelin, L. Alon, G. Chang, D.K. Sodickson, R.R. Regatte, G.C. Wiggins. "A Flexible Nested Dual-Nuclei Sodium and Proton Coil Array with Wideband Matching for Knee Cartilage MRI at 3 Tesla," available in early view in *Magnetic Resonance in Medicine*, 2015.
4. G.C. Wiggins, R. Brown, K. Lakshmanan. "High Performance RF Coils for Sodium MRI: Brain and Musculoskeletal Applications," available in early view in *NMR in Biomedicine*, 2015.

5. M.V. Vaidya, C.M. Collins, D.K. Sodickson, R. Brown, G.C. Wiggins, R. Lattanzi. "Dependence of B1+ and B1- Field Patterns on the Electrical Properties of the Sample and the Static Magnetic Field Strength," in press in *Concepts in Magnetic Resonance*, 2015.
6. L. Alon, C.M. Deniz, G. Carluccio, R. Brown, D.K. Sodickson, C.M. Collins. "Effects of Anatomical Differences on Electromagnetic Fields, SAR, and Temperature Change," available in early view in *Concepts in Magnetic Resonance Part B*, 2015.
7. C.M. Deniz, L. Alon, R. Brown, Y. Zhu. "Subject and Resource Specific Monitoring and Proactive Management of Parallel RF Transmission," early view, *Magnetic Resonance in Medicine*, 2015.
8. Q. Duan, J. Duyn, N. Gudino, J. de Zwart, P. van Gelderen, D.K. Sodickson, R. Brown. "Characterization of a dielectric phantom for high-field MRI applications," *Medical Physics*, 2014 Oct;41(10): 102303.
9. R. Brown, P. Storey, C. Geppert, K. McGorty, A-P Klautau Leite, J.S. Babb, D.K. Sodickson, G.C. Wiggins, L. Moy. "Breast MRI at 7 Tesla with a Bilateral Coil and Robust Fat Suppression," *J Magnetic Resonance Imaging*, 2014 Mar; 39(3): 540-549.
10. R. Brown, C.M. Deniz, B. Zhang, C. Stefanescu, G. Chang, D.K. Sodickson, G.C. Wiggins. "Design and Application of Combined 8 Channel Transmit and 10 channel Receive Arrays and RF Shimming for 7 Tesla Shoulder MRI," *Investigative Radiology*, 2014 Jan; 49(1): 35-47.
11. G. Chang, S. Honig, R. Brown, C.M. Deniz, R.R. Regatte, C. Rajapakse. "Finite Element Analysis Applied to 3-T MR Imaging of Proximal Femur Microarchitecture: Lower Bone Strength in Patients with Fragility Fractures Compared with Control Subjects," *Radiology*, 2014 Aug; 272(2):464-74.
12. G. Chang, C.M. Deniz, S. Honig, C. Rajapakse, R.R. Regatte, Y. Zhu, D.K. Sodickson, R. Brown. "MRI of the Hip at 7 Tesla: Feasibility of Bone Microarchitecture, High-Resolution Cartilage, and Clinical Imaging," *J Magnetic Resonance Imaging*, 2014 Jun;39(6):1384-93.
13. G. Chang, C.M. Deniz, C. Rajapakse, R.R. Regatte, S. Honig, R. Brown. "Feasibility of three-dimensional MRI of Proximal Femur Microarchitecture at 3 Tesla using 26 Receive Elements without and with Parallel Imaging," *J Magnetic Resonance Imaging*, 2014 Jul;40(1):229-38.
14. R. Brown, P. Storey, C. Geppert, K. McGorty, A-P Klautau Leite, J.S. Babb, D.K. Sodickson, G.C. Wiggins, L. Moy. "7 Tesla Breast MRI: Image Evaluation and Comparison to 3 Tesla," *European Radiology*, 2013 Nov; 23(11): 2969-2978.
15. R. Brown, G. Madelin, R. Lattanzi, G. Chang, R.R. Regatte, D.K. Sodickson, G.C. Wiggins. "Design of an Eight Channel Nested Sodium and Proton Coil for 7 Tesla Knee Imaging," *Magnetic Resonance in Medicine*, 2013 Jul;70(1):259-68.
16. C.M. Deniz, R. Brown, R. Lattanzi, L. Alon, D. Sodickson, Y. Zhu. "Maximum Efficiency RF Shimming: Theory and Initial Application on Hip Imaging at 7 Tesla," *Magnetic Resonance in Medicine*, 2013 May;69(5):1379-88.
17. L. Alon, C.M. Deniz, R. Brown, D. Sodickson, Y. Zhu, "A Method for In-Situ Characterization of RF Heating in Parallel Transmit MRI," *Magnetic Resonance in Medicine*, 2013 May;69(5):1457-65.

18. L. Fleysher, N. Oesingmann, R. Brown, D. Sodickson, G. Wiggins, M. Inglese. "Non-invasive Quantification of Intracellular Sodium in Human Brain using Ultra-High Field MRI," *NMR in Biomedicine*, 2013 Jan;26(1):9-19.
19. C.M. Deniz, L. Alon, R. Brown, D. Sodickson, Y. Zhu. "Specific Absorption Rate Benefits of Including Measured Electric Field Interactions in Parallel Excitation Pulse Design," *Magnetic Resonance in Medicine*, 2012 Jan;67(1):164-74.
20. Y. Zhu, L. Alon, C. Deniz, R. Brown, D. Sodickson. "System and SAR Characterization in Parallel RF Transmission," *Magnetic Resonance in Medicine*, 2012 May;67(5):1367-78.
21. R. Brown, C. Karmonik, G. Brunner, A. Lumsden, C. Ballantyne, S. Johnson, Y. Wang, J. Morrisett. "Simultaneous Bilateral Magnetic Resonance Imaging of the Femoral Arteries in Peripheral Arterial Disease Patients," *J Magnetic Resonance Imaging*, 2011 Jul;34(1):150-6.
22. R. Brown, T.D. Nguyen, P. Spincemaille, M. Cham, G. Choi, P.A. Winchester, M.R. Prince, Y. Wang. "Effect of Blood Flow on Double Inversion Recovery Vessel Wall MRI of the Peripheral Arteries: Quantitation With T2 Mapping and Comparison With Flow-Insensitive T2-Prepared Inversion Recovery Imaging," *Magnetic Resonance in Medicine*, 2010 Mar;63(3):736-44.
23. R. Brown, T.D. Nguyen, P. Spincemaille, M.R. Prince, Y. Wang. "In vivo quantification of femoral-popliteal compression during isometric thigh contraction: Assessment using MR angiography," *J Magnetic Resonance Imaging*, 2009 May;29(5):1116-24.
24. L. de Rochefort, R. Brown, M.R. Prince, Y. Wang. "Quantitative Susceptibility Imaging using Piece-Wise Constant Regularized Inversion of the Magnetic Field," *Magnetic Resonance in Medicine*, 2008 Oct;60(4):1003-9.
25. L. de Rochefort, T. Nguyen, R. Brown, G. Choi, J. Weinsaft, M.R. Prince, Y. Wang. "In vivo quantification of contrast agent concentration using the induced magnetic field for time-resolved arterial input function measurement with MRI," *Medical Physics*, 2008 Dec;35(12):5328-39.
26. R. Brown, Y. Wang, P. Spincemaille, R.F. Lee. "On the Noise Correlation Matrix for Multiple RF Coils," *Magnetic Resonance in Medicine*, 2007 Aug;58(2):218-24.
27. R. Brown, M.R. Prince, H. Ersoy, M. Dooley, A. Mareyam, B. Ho, K. Mohajer, Y. Wang. "Design of a Birdcage Array for Lower Extremity Angiography," *J Magnetic Resonance Imaging*, 2007 Sep;26(3):589-97.
28. P. Spincemaille, R. Brown, Y. Xian, Y. Wang. "Optimal Coil Design: The Two Coil Case," *Magnetic Resonance Imaging*, 2007 Jun;25(5):671-7.
29. R. Brown, A. Mareyam, E. Reid, Y. Wang. "Novel RF Coil Geometry for Lower Extremity Imaging," *Magnetic Resonance in Medicine*, 2004 Mar;51(3):635-9.

CONFERENCE ABSTRACTS

1. O. Khagai, G. Madelin, R. Brown, P. Parasoglou. "Dynamic PCr and pH imaging of the human lower leg muscle during exercise at 3T," submitted to *Gordon Conference on In Vivo Magnetic Resonance*, 2016.

2. L. Alon, C.M. Deniz, R. Brown, D.K. Sodickson, C. Collins. "A Radiative Slot Antenna Concept for High Fidelity Body Imaging at Ultra High Field," *Proc: ISMRM*, pp. 3516, 2016.
3. C. Ianniello, R. Brown, M. Cloos, Q. Duan, J. Walczyk, G. Wiggins, D.K. Sodickson. "Sugar free tissue-mimicking MRI phantoms for improved signal-to-noise ratio," *Proc: ISMRM*, pp. 2239, 2016.
4. C. Deniz, G. Chang, R. Brown. "3D printed phantom for sequence optimization of high resolution trabecular imaging," *Proc: ISMRM*, pp. 2289, 2016.
5. K. Lakshmanan, R. Brown, G. Wiggins. "A 3-D Loop/Loopole Receive Array for Spine Imaging at 3.0T," *Proc: ISMRM*, pp. 171, 2016.
6. P. Parasoglou, R. Brown, G. Madelin. "³¹P-MRI using A Spectrally Selective 3D non-Cartesian FLORET Sequence at 7 T," *Proc: ISMRM*, pp. 758 2016.
7. X. Che, R. Brown, L. Alon, R.R Regatte, P. Parasoglou, "A Low-Cost MR Compatible Ergometer For Assessing Lower Leg Muscle Metabolism," *Proc: ISMRM*, pp. 4522, 2016.
8. T. Koesters, R. Brown, T. Zhao, M. Fenchel, P. Speier, L. Feng, Y. Qian, F.E. Boada. "Motion Correction via Pilot Tone Navigators," *Proc: ISMRM*, pp. 4250, 2016. Second Place Presentation Award in "Detection and Correction of Motion in MRI and MRS" ISMRM Study Group Session
9. C. Ianniello, R. Brown, V Angellotti, B Grivo, DK Sodickson, R Massa, R Lattanzi. "Design and construction of a tissue-mimicking phantom to validate electrical properties mapping techniques based on magnetic resonance," *IEEE Radio Science Conference*, 2015.
10. M. Bruno, R. Brown, G. Madeline, P. Storey, H. Rusinek, T.M. Shepherd. "Optimized Clinical MRI Protocols for Ex Vivo Whole Brain - A New Tool for Radiology-Pathology Correlation," *Proc: RSNA*, SSQ16-08, 2015.
11. G. Madelin, R. Brown, L. Moy. "Quantitative sodium breast MRI: a pilot study for estimating (pseudo) intracellular sodium concentration and (pseudo) extracellular volume fraction in vivo," *Proc: ISMRM*, pp. 4634, 2015.
12. K. Lakshmanan, M.A. Cloos, R. Brown, T. Shepherd, G. Wiggins. "A Four Channel Transmit Receive "Loopole" Coil Array for Spine Imaging at 7.0 Tesla," *Proc: ISMRM*, pp. 628, 2015.
13. S. Baete, J. Raya, F. Knoll, G Cho, P. Parasoglou, R. Brown, T. Block, R. Otazo, J. Bencardino, E. Sigmund. "Feasibility of In Vivo Dynamic Diffusion Tensor Imaging in vivo on a 3T clinical scanner with a Multi Echo Sequence," *Proc: ISMRM*, pp. 2889, 2015.
14. C.M. Deniz, R. Brown, J.A. deZwart, C.M. Collins, D.K. Sodickson. "Multi-Channel Array Safety Using Least Squares Fitting based MR Thermometry," *Proc: ISMRM Safety in MRI Workshop*, 2014.
15. R. Brown, M.A. Cloos, C. Geppert, D.K. Sodickson, L. Moy, G.C. Wiggins. "Bilateral Breast Imaging Using a Split-Symmetric Parallel Transmission System," *Proc: ISMRM*, pp. 624, 2014.

16. R. Brown, K. Lakshmanan, G. Madelin, G. Chang, D.K. Sodickson, R. Regatte, G.C. Wiggins. "Design and Application of a Nested Multi-Channel Sodium Proton Knee Array at 3T," *Proc: ISMRM*, pp. 4880, 2014.
17. D.K. Sodickson, B. Zhang, Q. Duan, R. Brown, R. Lattanzi, K. Lakshmanan, M. Vaidya, A. Yang, R. Rehner, M. Vester, S. Popescu, S. Biber, B. Stoeckel, H. Chang, G. Wiggins. "Is a "one Size Fits All" Many-Element Bore-Lining Remote Body Array Feasible for Routine Imaging?," *Proc: ISMRM*, pp. 618, 2014.
18. Q. Duan, J.H. Duyn, N. Gudino, J.A. de Zwart, P. van Gelderen, D.K. Sodickson, R. Brown. "Characterization of a Dielectric Phantom for High-Field MRI Applications," *Proc: ISMRM*, pp. 4816, 2014.
19. K. Lakshmanan, R. Brown, G. Madelin, F. Boada, G. Wiggins. "An 8 Channel Transmit Receive Sodium & Nested 8 Channel Transmit Receive Proton Coil for 3.0 T Brain Imaging," *Proc: ISMRM*, pp. 4879, 2014.
20. C. Wisnieff, R. Brown, D. Pitt, Y. Wang. "Investigation of Susceptibility Contrast in Grey and White Matter Multiple Sclerosis Lesions," *Proc: ISMRM*, pp. 3403, 2014.
21. A. Hotca, C.S. Rajapakse, H. Rusinek, S. Honig, R. Brown, C.M. Deniz, R.R. Regatte, G. Chang. "In Vivo MR Computation of Whole Proximal Femur Mechanical Competence Using Micro-Finite Element Analysis Applied to High-Resolution 3T MRI of Proximal Femur Microarchitecture," *Proc: ISMRM*, pp. 3990, 2014.
22. C.M. Deniz, L. Alon, G. Cho, R. Brown, C.M. Collins, D.K. Sodickson. "Investigation of Different RF Coil Safety Assessment Techniques: E-Field Measurements, EM Field Simulations and MR Thermometry," *Proc: ISMRM*, pp. 4894, 2014.
23. C.M. Deniz, R. Brown, L. Alon, M. Cloos, G. Cho, G. Wiggins, C.M. Collins, D.K. Sodickson. "Multi-Channel Array Safety Simulations Validated with Field and Temperature Measurements," *Proc: ISMRM*, pp. 4929, 2014.
24. M. Vaidya, C.M. Collins, R. Brown, D.K. Sodickson, R. Lattanzi. "Improving Central Transmit Efficiency and Homogeneity Using Interleaved Shielded Dielectric Discs and Coil Elements in a 4-Element Transmit/receive Array at 7 T," *Proc: ISMRM*, pp. 4813, 2014.
25. S. Eskreis-Winkler, K. Deh, C. Wisnieff, P. Spincemaille, T. Liu, R. Brown, M. Jin, Y. Wang. "Shell Versus Solid Geometry of MS Lesions on Phase and QSM," *Proc: ISMRM*, pp. 3257, 2014.
26. R. Brown, P. Storey, C. Geppert, A.P. Klautau Leite, J.S. Babb, D.K. Sodickson, G.C. Wiggins, L. Moy. "Breast MRI at 7 Tesla: Image Evaluation and Comparison to 3 Tesla," *Proc: RSNA*, 2013.
27. R. Brown, P. Storey, C. Geppert, K. McGorty, A-P Klautau Leite, J.S. Babb, D.K. Sodickson, G.C. Wiggins, L. Moy. "7T Breast MRI with Robust Fat Suppression & High Uniformity," *ISMRM Workshop on Ultra High Field MRI*, 2013.
28. C.M. Deniz, G. Chang, D.K. Sodickson, Y. Zhu, R. Brown. "Toward Comprehensive Hip Imaging at 7T," *ISMRM Workshop on Ultra High Field MRI*, 2013.
29. C.M. Deniz, L. Alon, R. Brown, D.K. Sodickson, Y. Zhu. "Subject- and Resource-Specific Monitoring and Proactive Management of Parallel RF Transmission," *Proc: ISMRM*, pp. 76, 2013.

30. X. Yang, C.M. Deniz, Y. Li, R. Brown, Y. Zhu. "A Scalable Constellation Coil Design for 3T Body Imaging," *Proc: ISMRM*, pp. 4388, 2013.
31. G. Chang, R. Brown, G.C. Wiggins, C.S. Rajapakse, S. Honig, R.R. Regatte, "Feasibility of In Vivo 3-D MRI of Femoral Neck Bone Microarchitecture at 3 T," *Proc: ISMRM*, pp. 3462, 2013.
32. C. Geppert, C. Glielmi, R. Brown, L. Moy, J. Pfeuffer, E. Sigmund, "Application of Zoomed EPI and pTx for Breast Diffusion Weighted Imaging," *Proc: ISMRM*, pp. 1739, 2013.
33. K. Lakshmanan, M.A. Cloos, G.C. Wiggins, R. Brown, "Improving B1 Excitation in Head Apex by Combining Birdcage Coil with Crossed Dipole Elements," *Proc: ISMRM*, pp. 2754, 2013.
34. R. Brown, G. Madelin, R. Lattanzi, G. Chang, R.R. Regatte, D.K. Sodickson, G.C. Wiggins. "Design of a Nested Sodium and Proton Array for 7 Tesla Knee Imaging," *Proc: ISMRM*, pp.2790, 2012.
35. R. Brown, B. Zhang, C.M. Deniz, G.Y. Cho, C. Stefanescu, S. Wang, D.K. Sodickson, G.C. Wiggins. "Detunable Transmit Array and Flexible Receive Array for 7T Shoulder Imaging," *Proc: ISMRM*, pp.428, 2012. Summa Cum Laude Merit Award
36. R. Brown, P. Storey, K. McGorty, J. Raya, D.K. Sodickson, G.C. Wiggins, L. Moy. "Toward improved T1-weighted breast imaging at 7T: preliminary results and comparison with 3T," *Proc: ISMRM*, pp.2981, 2012.
37. D.K. Sodickson, L. Alon, C.M. Deniz, R. Brown, B. Zhang, G.C. Wiggins, G.Y. Cho, N. Ben Eliezer, D. Novikov, R. Lattanzi, Q. Duan, L.A. Sodickson, Y. Zhu. "Local Maxwell Tomography with Transmit-Receive Coil Arrays for Contact-Free Mapping of Tissue Electrical Properties and Determination of Absolute RF Phase," *Proc. ISMRM*, pp.387, 2012.
38. G.C. Wiggins, R. Brown, B. Zhang, M. Vester, S. Popescu, R. Rehner, D.K. Sodickson. "SNR Degradation in Receive Arrays Due to Preamplifier Noise Coupling and A Method for Mitigation," *Proc. ISMRM*, pp.2689, 2012.
39. M. Vaidya, D.K. Sodickson, R. Brown, G.C. Wiggins, R. Lattanzi. "B1+ and B1- field pattern dependence on the electrical properties of the sample and the static magnetic field strength," *Proc: ISMRM*, pp.2796, 2012.
40. M. Vester, S. Biber, R. Rehner, G.C. Wiggins, R. Brown, D.K. Sodickson. "Mitigation of inductive coupling in array coils by wideband port matching," *Proc. ISMRM*, pp. 2690, 2012.
41. X. Yang, R. Brown, C.M. Deniz, B. Zhang, W. Lee, L. Alon, D.K. Sodickson, Y. Zhu. "Constellation coil for multi-nuclear imaging," *Proc. ISMRM*, pp. 2819, 2012.
42. L. Alon, C.M. Deniz, R. Brown, D.K. Sodickson, Y. Zhu. "Difficulties associated with aligning simulated and constructed coils," *Proc. ISMRM*, pp. 2772, 2012.
43. X. Yang, B. Zhang, R. Brown, W. Lee, D.K. Sodickson, Y. Zhu. "Investigation optimum ports' location for multi-nuclear constellation coil," *Proc. ISMRM*, pp. 2795, 2012.
44. C.M. Deniz, R. Brown, R. Lattanzi, L. Alon, D.K. Sodickson, Y. Zhu. "Maximum efficiency RF shimming," *Proc. ISMRM*, pp. 3479, 2012.

45. B. Zhang, R. Brown, C. Wiggins, D.K. Sodickson, B. Stoeckel, G. Wiggins. "A 7T Coil System for Imaging Humans in the Sphinx Position to Evaluate the Effect of Head Orientation Relative to B0 for MR Imaging," *Proc: ISMRM*, pp.162, 2011.
46. T. Zheng, X. Yang, M. Finnerty, J. Heilman, J. Herczak, H. Fujita, G. Wiggins, R. Brown, B. Stoeckel. "A 7-Tesla High Density Tx/Rx Mammography Coil," *Proc: ISMRM*, pp. 3819, 2011.
47. M. Finnerty, X. Yang, T. Zheng, J. Heilman, N. Castrilla, J. Herczak, H. Fujita, G.C. Wiggins, R. Brown, G. Madelin, G. Chang, R.R. Regatte, M. Recht, S. Trattig, V. Juras, W. Renz, F. Schmitt, B. Stoeckel, A. Potthast, K. Wicklow. "A 7-Tesla Transmit with 15-Channel Receive-Only Array Knee Coil for Sodium Imaging," *Proc: ISMRM*, pp.1900, 2011.
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PUBLICATIONS – ACKNOWLEDGED WORK

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