Feliks Kogan

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I - Education

September 2015 – **Postdoctoral Fellowship in Radiology, Stanford University, Stanford, CA.**
Development of Novel MRI and PET-MRI methods for Early Detection of Musculoskeletal Disease.

May 2013 – **Ph.D. in Bioengineering, University of Pennsylvania, Philadelphia, PA.**
Endogenous Chemical Exchange Based Magnetic Resonance Imaging Techniques and Their Applications.
Advisor: Ravinder Reddy.

HHMI Interfaces Fellowship - Completed two years of academic curriculum at the University of Pennsylvania School of Medicine

May 2007 – **B.S. in Optics (High Distinction) and Applied Math (Distinction) – Cum Laude, University of Rochester, Rochester, NY.**
Minor in Economics

II - Professional Appointments and Work Experience

05/01/2024 – Current; 05/01/2019 – 04/30/2024
Assistant Professor, Department of Radiology, Stanford University, Stanford, CA.
Research focus on novel imaging MRI and PET-MRI methods of musculoskeletal function and disease

1/01/2017 – 4/30/2019
Instructor, Department of Radiology, Stanford University, Stanford, CA.
Research on body, breast, musculoskeletal and vascular magnetic resonance imaging (MRI) technology and translation.

October 2015 – December 2016
Research Associate, Department of Radiology, Stanford University, Stanford, CA.
Research in magnetic resonance imaging (MRI) of musculoskeletal and cardiovascular systems. Development of new MRI methods to enhance imaging speed, contrast and quality.

May 2013 – August 2013
Postdoctoral Research, Department of Radiology, University of Pennsylvania, Philadelphia, PA.
Research of CEST and ASL MRI imaging of muscle energetics and perfusion

September 2006 – June 2007
Research Assistant, Department of Radiology, University of Rochester, Rochester, NY.
Developed an optical needle for spectroscopic measurement of tissue to assist in Photodynamic Therapy

May 2005 – Aug 2005, May 2006 – Aug 2006
Research Assistant, Wellman Center, Massachusetts General Hospital, Boston, MA.
Worked on the development of a catheter to use Optical Coherence Tomography (OCT) and Raman spectroscopy to image the coronary artery

January 2005 – May 2006
Research Assistant, Laboratory for Laser Energetics, University of Rochester, Rochester, NY.
Developed liquid crystal technology for flexible displays.

III - Honors and Awards

A. Personal Honors and Awards

2019 Distinguished Reviewer – Magnetic Resonance in Medicine (MRM)
2018 Council of Early Investigators in Imaging Travel Award
2017 Young Investigator Award – ISMRM Workshop on OA Imaging

2017	MRM Top-5 (#4) Most Cited Articles of 2014 (ISMRM)
2017	ISMRM W. S. Moore Young Investigator Award Finalist
2016	Editors Recognition Award – Current Radiology Reports (Top 10 Most Downloaded Articles)
2016, 2017	Distinguished Reviewer – Journal of Magnetic Resonance Imaging
2015	ISMRM Junior Fellow
2015	Merit Award for Highest Scoring Trainee Abstract – International Workshop on OA Imaging
2014	Editors Pick Article – Magnetic Resonance in Medicine
2013, 2018	ISMRM Magna Cum Laude Merit Award
2012, 2015	ISMRM Summa Cum Laude Merit Award
2010	NIH National Institute of Biomedical Imaging and Bioengineering (NIBIB) Training Grant
2010	Juan Grana Graduate Teaching Assistantship
2007	HHMI-NIBIB Interfaces Fellowship in Imaging Sciences
2007	National Science Foundation Graduate Fellowship Honorable Mention
2007	Distinction in Applied Mathematics, University of Rochester
2007	High Distinction in Optics, University of Rochester
2007	University of Rochester Optics Faculty Award

B. (Selected) Honors and Awards as a Mentor and Advisor

2025	Wu Tsai Human Performance Alliance Research Predoctoral Fellowship (Primary Advisor – Madison George)
2025	Siebel Scholar Fellowship (Primary Advisor – Ananya Goyal)
2025	CIHR Banting Postdoctoral Fellowship (Primary Advisor – Olivia Bruce)
2025	Stryker/ORS Womens Research Fellowship (Primary Advisor – Olivia Bruce)
2025	Young Investigator Award, Intl. Workshop on Osteoarthritis Imaging (IWOAI) (Primary Advisor – Ananya Goyal)
2025	1st Place- ISMRM MSK Study Group Trainee Clinical Abstract Competition (Primary Advisor – Ananya Goyal)
2024	Wu Tsai Human Performance Alliance Postdoctoral Fellowship (Primary Advisor – Olivia Bruce)
2024	AMBIZIONE Career Development Award – Swiss National Science Foundation (Primary Mentor – Marco Barbieri)
2024	Stanford Diversifying Academia, Recruiting Excellence (DARE) Doctoral Fellowship (Primary Advisor – Ananya Goyal)
2023	Marie Skłodowska-Curie Actions Individual Fellowship- European Commission – [HORIZON-MSCA-2023-PF-01] (Primary Advisor – Marco Barbieri)
2023	ISMRM Junior Fellow (Mentor – Marco Barbieri)
2023	e*WEAR* Spirit Award (Advisor/Senior Author – Ananya Goyal)
2022	Wu Tsai Human Performance Alliance Research Predoctoral Fellowship (Primary Advisor – Ananya Goyal)
2020	Best Abstract – ISMRM MSK Study Group (Primary Advisor – Lauren Watkins)
2019	Stanford Bio-X Interdisciplinary Initiatives Seed Grants Program Symposium Best Poster (Primary Advisor – Lauren Watkins)
2019	SCBT-MR Innovations Award (Mentor/Co-Author – Elka Rubin)
2019	Firestone Medal Winner (Top Ten Percent of all Stanford Honors Theses) – (Advisor - Joanna Langner)
2019	W. S. Moore Award Winner (ISMRM Young Investigator Award) – (Mentor/Co-Author – Akshay Chaudhari)

IV – Scholarly Publications

A. Peer-Reviewed Journal Articles (Original Research)

1. Cai K, Haris M, Singh A, **Kogan F**, Greenberg JH, Hariharan H, Detre J, Reddy R. Magnetic Resonance Imaging of Glutamate. *Nat Med*. 2012 Jan;18(2):302-6. PMC 3274604
2. Haris M, Nanga RP, Singh A, Cai K, **Kogan F**, Hariharan H, Reddy R. Exchange Rates of Creatine Kinase Metabolites: Feasibility of Imaging Creatine by Chemical Exchange Saturation Transfer MRI. *NMR Biomed.* 2012 Nov;25(11):1305-9. PMC3837460
3. **Kogan F**, Singh A, Cai K, Haris M, Hariharan H, Reddy R. Investigation of Chemical Exchange at Intermediate Exchange Rates using a Combination of Chemical Exchange Saturation Transfer (CEST) and Spin-Locking Methods (CESTrho). *Magn Reson Med.* 2012 Jul;68(1):107-19. PMC3564676
4. Singh A, Haris M, Cai K, Kassey V, **Kogan F**, Reddy D, Hariharan H, Reddy R. Chemical Exchange Saturation Transfer Magnetic Resonance Imaging of Human Cartilage at 3T and 7T. *Magn Reson Med.* 2012 Aug68(2):588-94. PMC4067761 – (**MRM Top-5 (#5) Most Cited Articles of 2012)**
5. Haris M, Singh A, Cai K, Nath K, **Kogan F**, Hariharan H, Reddy R. MICEST: A Potential Tool for Non-Invasive Detection of Molecular Changes in Alzheimer's Disease. *J Neurosci Methods.* 2013 Jan;212(1):87-93. PMC3508258
6. Haris M, Nath K, Singh A, Cai K, Crescenzi R, **Kogan F**, Verma G, Reddy S, Hariharan H, Melhelm E, Reddy R. Imaging of Glutamate Neurotransmitter Alterations in Alzheimer's Disease. *NMR Biomed*. 2013 Apr;26(4):386-91. PMC3556355
7. **Kogan F**, Singh A, DeBrosse C, Haris M, Cai K, Nanga RP, Hariharan H, Reddy R. Imaging of Glutamate in the Spinal Cord using GluCEST. *Neuroimage.* 2013 Aug; 77:262-7. PMC3804007
8. **Kogan F,** Haris M, Singh A, Cai K, DeBrosse C, Nanga RP, Hariharan H, Reddy R. Method for High-Resolution Imaging of Creatine In Vivo using Chemical Exchange Saturation Transfer. *Magn Reson Med.* 2014 Jan71(1):164-72. PMC3725192 – **(Editors Pick, MRM Top-5 (#4) Most Cited Articles of 2014)**
9. Haris M, Singh A, Cai K, **Kogan F**, McGarvey J, DeBrosse C, Zsido G, Witschey W, Koomalsingh K, Pilla J, Chirinos J, Ferrari V, Gorman J, Hariharan H, Gorman R, Reddy R. A Technique for *In Vivo* Mapping of Myocardial Creatine Kinase Metabolism. *Nat Med.* 2014 Feb;20(2):209-14. PMC4127628
10. Singh A, Haris M, Cai K, **Kogan F**, Hariharan H, Reddy R. High Resolution T1p Mapping of In Vivo Human Knee Cartilage at 7T. *PLoS One*. 2014 May;9(5):e97486. PMC4022681
11. Haris M, Singh A, Mohammad I, Ittyerah R, Nath K, Nanga RP, Debrosse C, **Kogan F**, Cai K, Poptani H, Reddy D, Hariharan H, Reddy R. In Vivo Magnetic Resonance Imaging of Tumor Protease Activity. *Sci Rep.* 2014 Aug;4:6081. PMC4133714
12. **Kogan F**, Haris M, Singh A, DeBrosse C, Cai K, Nanga RP, Hariharan H, Reddy R. In Vivo Chemical Exchange Saturation Transfer Imaging of Creatine (CrCEST) in Skeletal Muscle at 3T. *J Magn Reson Imaging*. 2014 Sep;40(3):596-602. PMC4059780
13. Matzat S, McWalter EJ, **Kogan F,** Chen W, Gold GE. T2 Relaxation Time Quantitation Differs between Pulse Sequences in Articular Cartilage. *J Magn Reson Imaging*. 2015 Jul;42(1):105-13. PMC4369475
14. Dorsey S, Haris M, Singh A, Witschey W, Rodell C, **Kogan F**, Reddy R, Burdick J. Visualization of Injectable Hydrogels using Chemical Exchange Saturation Transfer MRI. *ACS Biomater Sci Eng*. 2015 Apr;1(4):227–37. PMID: 33435047
15. **Kogan F**, Stafford R, Englund E, Gold G, Hariharan H, Detre J, Reddy R. Perfusion has no effect on the in vivo CEST effect from Cr (CrCEST) in skeletal muscle. *NMR Biomed.* 2017 Jan;30(1):e3673. PMC5518925
16. **Kogan F**, Hargreaves B, Gold G. Volumetric Multi-Slice GagCEST Imaging of Articular Cartilage: Optimization & Comparison with T1rho. *Magn Reson Med.* 2017 Mar;77(3):1134-41. PMC5002392

17. **Kogan F,** Fan A, McWalter E, Oei E, Quon A, Gold G. PET/MR Imaging of Metabolic Activity in Osteoarthritis: A Feasibility Study. *J Magn Reson Imaging*. 2017 Jun;45(6):1736-45. PMC5761655 **(ISMRM Young Investigator Award Finalist (2017 ISMRM W. S. Moore Young Investigator Award Finalist), Lodwick Award – Best paper of 2016 in the fields of musculoskeletal radiology, medicine, or biology - Musculoskeletal Division of the Department of Radiology at the Massachusetts General Hospital)**
18. **Kogan F**, Levine E, Chaudhari A, Monu U, Epperson K, Oei E, Gold G, Hargreaves B. Simultaneous Bilateral-Knee MR Imaging. *Magn Reson Med*. 2018 Aug;80(2):529-37. PMC5910219
19. Chaudhari A, Fang Z, **Kogan F**, Wood J, Stevens K, Gibbons E, Lee JH, Gold GE, Hargreaves BA. Super-Resolution Musculoskeletal MRI using Deep Learning. *Magn Reson Med*. 2018 Nov; 80(5):2139-54. PMC6107420 **(Editors Pick – Top 10 Most Downloaded Paper)**
20. **Kogan F**, Fan A, Monu U, Iagaru A, Hargreaves B, Gold G. Quantitative Imaging of Bone-Cartilage Interactions in ACL-Injured Patients with PET-MRI. *Osteoarthritis Cartilage*. 2018 Jun;26(6):790-6. PMC6037170
21. Chaudhari A, Stevens K, Sveinsson B, Wood J, Beaulieu CF, Oei EHG, Rosenberg J, **Kogan F**, Alley M, Gold GE, Hargreaves BA. 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. *J Magn Reson Imaging*. 2019 Jun;49(7):e184-94. PMC7850298 **(2019 ISMRM W. S. Moore Young Investigator Award Winner)** **Participated in Conception and design, Drafting and Revision of the manuscript as well as co-supervision of the first author*
22. Haddock B, Fan A, Jorgenson N, Suetta C, Gold G, **Kogan F**. Kinetic [^{18}F]-Fluoride of the Knee in Normal Volunteers. *Clin Nucl Med.* 2019 May;44(5):377-85. PMC6449188
23. Haddock B, Fan A, Uhlrich S, Jorgenson N, Suetta C, Gold G, **Kogan F**. Assessment of Acute Bone Loading in Humans using [18F]-NaF PET/MRI. *Eur J Nucl Med Mol Imaging.* 2019 Nov;46(12):2452-63. PMC6813760
24. Langner J, Black M, MacKay J, Hall KE, Safran M, **Kogan F**, Gold G. The Prevalence of Femoroacetabular Impingement Anatomy in Division 1 Aquatic Athletes Who Tread Water. *J Hip Preserv Surg*. 2020 Mar;7(2):233-41. PMC7605769 **Was the primary mentor to the first author. Participated extensively in conception and design of the study; acquisition, analysis and interpretation of data; and drafting of the manuscript.*
25. Watkins LE, Rubin EB, Mazzoli V, Uhlrich SD, Desai AD, Black M, Ho G, Delp SL, Levenston ME, Beaupre G, Gold GE, **Kogan F**. Rapid Volumetric gagCEST Imaging of Knee Articular Cartilage at 3T: Evaluation of Improved Dynamic Range and an Osteoarthritic Population. *NMR Biomed*. 2020 Aug;33(8):e4310. PMID:7347437 PMCID: PMC7347437
26. Gao K, Pedoia V, Young K, **Kogan F**, Koff MF, Gold GE, Potter H, Majumdar S. Multiparametric MRI Characterization of Knee Articular Cartilage and subchondral bone shape in Collegiate Basketball Players. *J Orthop Res*. 2021:39(7);1512-1522. PMID: 32910520 PMCID:PMC8359246. **Multisite study. Participated in the acquisition of data at Stanford as well as in critical revision of the manuscript.*
27. Mazzoli V, Moulin K, **Kogan F**, Hargreaves B, Gold G. Diffusion Imaging of Skeletal Muscle Contraction using Oscillating Gradient Spin Echo (OGSE). *Front Neurol*. 2021 Feb;12:608549. eCollection 2021. PMID: 33658976 PMCID: PMC7917051 **Participated in mentorship of the first author on this topic as well as critical revision of the paper.*
28. Crowder H, Mazzoli V, Black M, Watkins L, **Kogan F**, Hargreaves B, Levenston M, Gold GE. Characterizing the Transient Response of Knee Cartilage to Running: Decreases in Cartilage T2 of Female Recreational Runners. *J Orthop Res*. 2021:39(11);2340-2352. PMID: 33483397 PMCID: PMC8295402. **Participated extensively in the setup of technical aspects related to imaging in the study. Also participated in data analysis as well as critical revision of the paper.*

29. Watkins L, MacKay J, Haddock B, Mazzoli V, Uhlrich S, Gold G, **Kogan F**. Kinetic Modeling of [18F]Sodium Fluoride PET Uptake for Quantitative Assessment of Subchondral Bone Perfusion and Mineralization in Knee Osteoarthritis. *Osteoarthritis Cartilage*. 2021; 29(6):849-58. PMID: 33639259 PMCID: PMC8159876
30. Rubin E, Mazzoli V, Black M, Young K, Desai A, Koff M, Sreedhar A, **Kogan F**, Safran M, Vincentini D, Knox K, Yamada T, McCabe A, Majumdar S, Potter H, Gold GE. Effects of the Competitive Season and Off-Season on Knee Articular Cartilage in Collegiate Basketball Players using Quantitative MRI: A Multi-Center Study. *J Magn Reson Imaging* 202:54(3);840-851. PMID: 33763929 PMCID: PMC8817387 **Participated in the acquisition of data as well as in critical revision of the manuscript.*
31. Thoenen J, Stevens K, Turmesezi T, Chaudhari A, Watkins L, McWalter E, Hargreaves B, Gold G, MacKay J, **Kogan F**. Non-Contrast MRI of Synovitis in the Knee Using Quantitative DESS. *Eur Radiol* 2021:31(12):9369-9379. PMID: 33993332 PMCID: PMC8591148
32. MacKay J, Watkins L, Gold G, **Kogan F**. [^{18}F]NaF PET-MRI Provides Direct In-Vivo Evidence of the Association between Osseous Metabolic Activity and Adjacent Synovitis in Knee Osteoarthritis: A Cross-Sectional Study. *Osteoarthritis Cartilage*. 2021; 29(8): 1155-1162. PMID: 33975018 PMCID: PMC8319134
33. **The RSNA QIBA MSK Biomarker Committee**. The QIBA Profile for MRI-Based Compositional Imaging of Knee Cartilage. Radiology 2021;301(2);423-432 PMID: 34491127 PMCID: PMC8574057
34. Sandford H, MacKay J, Watkins L, Gold G, **Kogan F**, Mazzoli V. Gadolinium-Free Assessment of Synovitis Using Diffusion Tensor Imaging. *NMR Biomed 2022;35(1):e4614* PMID: 34549476 PMCID: PMC8688337 **Participated extensively in conception and design of the study; acquisition, analysis and interpretation of data; and critical revision of the manuscript. Also obtained funding from which the study was supported*
35. Watkins L, Haddock B, Mackay J, Uhlrich S, Mazzoli V, Gold G, **Kogan F**. [18F]NaF PET-MRI Detects Increased Metabolic Bone Response to Loading Stress in Osteoarthritic Knees. *Osteoarthritis and Cartilage* 2022;30(11):1515-1525 PMID: 36031138 PMCID: PMC9922526
36. Barbieri M, Chaudhari A, Moran C, Gold G, Hargreaves B, **Kogan F**. A Method for Measuring B0 Field Inhomogeneity using Quantitative DESS(qDESS). *Magn Reson Med* 2023;89(2):577-593. PMCID: PMC9712261 (**Cover Image, Editors Pick**)
37. Schmidt A, Desai A, Watkins L, Crowder H, Black M, Mazzoli V, Rubin E, Lurice K, **Kogan F**, Gold G, Hargreaves B, Chaudhari A. Generalizability of Deep Learning Segmenetation Algorithms for Automated Assessment of Cartilage Morphology and Relaxometry. *J Magn Reson Imag* 2023 Apr;57(4):1029-1039 PMID: 35852498 PMCID: PMC9849481 **Served as an advisor to the lead author providing context and feedback on research direction. Also participated in critical revision of the manuscript.*
38. Tierney S, Long J, Desai M, Leonard M, Palaniappan L, Cooke J, Davila T, **Kogan F**, Lui M, Punn R, Wang CH Schneider L, Bernstein D. Design and Rationale of RE-ENERGIZE FONTAN RandomizEd Exercise iNtERvention desiGned to maximIZE fitness in FONTAN patients. *American Heart Journal*. 2023 Feb 14;259:68-78. PMID: 36796574 **Leading the imaging component of this ongoing study including conception and design, acquisition, analysis and interpretation of data.*
39. Barbieri M, Watkins LE, Mazzoli V, Desai AD, Rubin E, Schmidt AM, Gold GE, Hargreaves BA, Chaudhari A, **Kogan F**. B1 Field inhomogeneity correction for qDESS T2 mapping: application to rapid bilateral knee imaging. *Magnetic Resonance Materials in Physics, Biology and Medicine.* 2023 Oct;36(5):711-724. PMID: 37142852; PMCID: PMC10524110
40. Watkins LE, Haddock B, Goyal A, **Kogan F**. Effects of dynamic [^{18}F]NaF PET scan duration on kinetic uptake parameters in the knee. Front Nucl Med. 2023 Nov 24;3:1194961. PMID: 39355034; PMCID: PMC11440834.

41. Barbieri M, Hooijmans MT, Moulin K, Cork TE, Ennis DB, Gold GE, **Kogan F**, Mazzoli V. A deep learning approach for fast muscle water T2 mapping with subject specific fat T2 calibration from multi-spin-echo acquisitions. Sci Rep. 2024 Apr 8;14(1):8253. PMID: 38589478; PMCID: PMC11002020. **Was the primary mentor to the first author as well as a co-mentor to the senior author. Participated in all aspects of research from research direction to critical revision of the manuscript.*
42. Rubin E, Schmidt A, Koff M, **Kogan F**, Gao K, Majumdar S, Potter H, Gold GE. Current and Novel MRI Techniques for the Assessment of Lower Extremity Injuries in Basketball Players. *Journal of Magnetic Resonance Imaging.* 2024 Jun;59(6):1902-1913. PMID: 37854004. **Lead the Stanford imaging acquisition component of this multi-site study. Participated in analysis and interpretation of data as well as critical revision of the manuscript.*
43. Gatti AA, Blankemeier L, Van Veen D, Hargreaves B, Delp SL, Gold GE, **Kogan F**, Chaudhari AS. ShapeMed-Knee: A Dataset and Neural Shape Model Benchmark for Modeling 3D Femurs. IEEE Trans Med Imaging. 2025 Mar;44(3):1140-1152. PubMed PMID: 39453794; PubMed Central PMCID: PMC11913582. **Served as a co-mentor to the lead author providing context and feedback on research direction. Also participated in critical revision of the manuscript.*
44. Barbieri M, Gatti AA, **Kogan F.** Improving Accuracy and Reproducibility of Cartilage T_2 Mapping in the OAI Dataset Through Extended Phase Graph Modeling. J Magn Reson Imaging. 2025 May;61(5):2116-2127. PMID: 39467097.
45. Pai A, Gatti AA, Black M, Young K, Desai A, Barbieri M, Asay J, Sherman S, Gold GE, **Kogan F,** Hargreaves B, Chaudhari AS. T2 Clusters Are More Sensitive than Mean T2 Change to Detect Early an Longitudinal Changes in Anterior Cruciate Ligament Reconstructed and Healthy Knees. *J MRI* 2025 Jun;61(6):2615-2629. PMID: 39740037 PMCID: PMC12064371. **Helped with conceptualization and acquisition of the study. Served as a co-mentor to the lead author providing context and feedback on research direction. Also participated in critical revision of the manuscript.*
46. Khalighi MM, Young CB, Spangler-Bickell MG, Deller TW, Jansen F, Holley D, Vossler H, Zhao M, **Kogan F**, Steinberg G, Mormino E, Moseley M, Zaharchuk G. A Novel Method in PET Image Reconstruction Using MRI Anatomical Priors. IEEE Trans Radiat Plasma Med Sci. 2025 Nov;9(8):1074-1082. PMID: 41221102; PMCID: PMC12599855. **Provided context and feedback on application of the developed technologies to musculoskeletal PET-MRI. Also participated in critical revision of the manuscript.*
47. Mazzoli V, Vainberg Y, Hall ME, Barbieri M, Asay J, Muccini J, Rosenberg J, **Kogan F**, Delp S, Gold GE. Improved Strength Prediction Combining MRI Biomarkers of Muscle Quantity and Quality. NMR Biomed. 2025 Sep;38(9):e70112. doi: 10.1002/nbm.70112. PMID: 40769514; PMCID: PMC12778366. **Served as a co-mentor to the lead author providing context and feedback on research direction. Also participated in study conceptualization, data acquisition and critical revision of the manuscript.*

B. Peer-Reviewed Journal Articles Accepted (In Press / Early View)

48. Uhlrich SD*, Mazzoli V*, Silder A, Finlay AK, **Kogan F**, Gold GE, Delp SL, Beaupre GS, Kolesar JA. Personalised gait retraining for medial compartment knee osteoarthritis: a randomised controlled trial. Lancet Rheumatol. 2025 Aug 12:S2665-9913(25)00151-1. Epub ahead of print. PMID: 40816302. [Accepted May 2025] **Helped with conceptualization and acquisition of the Imaging portion of the study. Served as a co-mentor to both the lead authors providing support for analysis and contextualization of imaging results. Also participated in critical revision of the manuscript.*
49. Pai A, Andrews M, Gurchiek RD, Pincheira PA, Barbieri M, Friedrich T, **Kogan F**, Gold GE, Mazzoli V, Lichtwark GA, Delp SL, Chaudhari AS. Hamstring Muscle Architecture and Microstructure Changes Following Nordic Hamstring Exercise Training and Detraining. *J Sport Health Sci*. 2025 Jun 25;14:101070.. Epub ahead of print. PMID: 40578759. [Accepted June 2025] **Served as a co-mentor to the lead author providing context and feedback on research direction. Also participated in critical revision of the manuscript.*

50. Ivanochko NK, Gatti AA, Wiebenga EG, Noseworthy MD, **Kogan F**, Maly MR. Exercise-Induced Changes in Knee Cartilage In Vivo: Comparing MRI Sequences. J Orthop Res. 2025 Nov;43(11):1942-1953. doi: 10.1002/jor.70043. Epub 2025 Aug 10. PMID: 40783806; PMCID: PMC12509249. [Accepted July 2025] **Provided support for the imaging acquisition and analysis of the study including context and feedback on results. Also participated critical revision of the manuscript.*
51. Guermazi A, Eckstein F, Gold GE, Hayashi D, Jarray M, **Kogan F**, Li X, Link TM, Nebelung S, Oei EHG, Omoumi P, Saarakkala S, Trattnig S, Wirth W, Roemer F. Advances in Cartilage Imaging Techniques. [Accepted to *Nature Rheumatology Reviews*] **Lead author on the Nuclear Medicine section of this scoping review*
52. Goyal A, Barbieri M, Mazzoli V, **Kogan F**. Tension-Dependent Variability and Repeatability of Achilles Tendon UTE-T_2* Mapping Using Mono- and Bi-Exponential Models. [Accepted to *NMR in Biomedicine*]

C. Peer-Reviewed Journal Articles (Editorials, Other…)

53. MacKay J, Roemer F, **Kogan F**. Standardized multi-vendor compositional MRI of knee cartilage: a key step towards clinical translation? *Osteoarthritis Cartilage*. 2020; 28(12):1497–500. PMID: 32882389
54. MacKay J, Watkins LE, **Kogan F**. Editorial for "Local patterns in two-year T1ρ and T2 changes in hip cartilage are related to sex and functional data: a prospective evaluation on hip osteoarthritis participants" *JMRI* 2023 Apr;57(4):1054-1055 PMID: 36286012
55. **Kogan F**, Watkins LE, Goyal A. PET-MRI: The Promise of Multi-tissue Imaging of Early Disease Mechanisms in Osteoarthritis. *Osteoarthritis and Cartilage.* 2025 Jan;33(1):5-8. PubMed PMID: 39489372.

D. Peer-Reviewed Invited Review Articles

56. **Kogan F,** Hariharan H, Reddy R. Chemical Exchange Saturation Transfer (CEST) Imaging: Description of Technique and Potential Clinical Applications. *Curr Radiol Rep* 2013;1(2):102-14. PMID: 23730540 PMCID: PMC366411– **(Editors Recognition Award)**
57. Matzat SJ, **Kogan F**, Fong G, Gold GE. Imaging strategies for assessing cartilage composition in osteoarthritis. *Curr Rheumatol Rep.* 2014 Nov;16(11):462. PMID: 25218737 PMCID: PMC4322897
58. **Kogan F**, Fan AP, Gold GE. Potential of PET-MRI for imaging of non-oncologic musculoskeletal disease. *Quant Imaging Med Surg*. 2016;6(6):756-71. PMID: 2809451 PMCID: PMC521958
59. **Kogan F**, Broski S, Yoon D, Gold G. Applications of PET-MRI in Musculoskeletal Disease. *J Magn Reson Imaging*. 2018;48(1):27-47. PMID: 2996913 PMCID: PMC6032526
60. Yoder JS, **Kogan F**, Gold GE. PET-MRI for the Study of Metabolic Bone Disease. *Curr Osteopor Rep*. 2018;16(6):665-73. PMID: 30284705 PMCID: PMC6234052
61. Yoder JS, **Kogan F**, Gold GE. Applications of PET–Computed Tomography–Magnetic Resonance in the Management of Benign Musculoskeletal Disorders. *PET Clinics*. 2019;14(1):1-15. PMID: 30420212 PMCID: PMC6245663
62. Yoon D, **Kogan F**, Gold GE, Biswal S. Identifying Musculoskeletal Pain Generators using Clinical PET. *Semin Musculoskelet Radiol*. 2020;24(4):441-50. PMID: 32992371
63. Chaudhari A, **Kogan F**, Pedoia V, Majumdar S, Gold GE, Hargreaves BA. Rapid Knee MRI Acquisition and Analysis Techniques for Imaging Osteoarthritis. *J Magn Reson Imaging*. 2020; 52(5):1321-39. PMID: 31755191 PMCID: PMC7925938
64. Barbieri, M, Fantazzini P, Testa C, Bortolotti V, Baruffaldi F, **Kogan F,** Brizi L. Characterization of Structural Bone Properties through Portable Single-Sided NMR Devices: State of the Art and Future Perspectives. *Int J Mol. Sci. 2021;22,7318* PMID: 34298936 PMCID: PMC8303251
65. Thoenen J, MacKay J, Gold GE, **Kogan F.** Imaging of Inflammation in Osteoarthritis. *AJR Am J Roentgenol.* 2022; 218(3):405-417 *PMID:34286595 PMCID:PMC8863650*
66. Hayashi D, Roemer F, Link T, Li X, **Kogan F**, Segal N, Omoumi P, Guermazi A. Latest Advancements in Imaging Technologies in Osteoarthritis. *Therapeutic Advances in Musculoskeletal Disease* 2022 Dec 26:14:1759720X221146621 PMID: 36601087 PMCID: PMC9806406

67. Jarray M, Roemer F, Bauerle T, **Kogan F**, Guermazi A. *PET Imaging in Osteoarthritis. PET Clinics.* 2023 Jan;18(1):21-29. PMID: 36442963
68. Watkins LE, Goyal A, Gatti AA, **Kogan F**. Imaging of Joint Response to Exercise with MRI and PET. *Skeletal Radiology*. 2023 Nov;52(11):2159-2183. PMID: 36646851; PMCID: PMC10350475.
69. Goyal A, Watkins L, Bruce O, Gatti AA, **Kogan F**. Metabolic Bone Imaging and Its Relationship with Biomechanics. *Osteoarthritis Imaging*. 2024;4(3):100242
70. **Kogan F,** Yoon D, Teeter MG, Chaudhari AJ, Hales L, Barbieri M, Gold GE, Vainberg Y, Goyal A, Watkins L. Multimodal positron emission tomography (PET) imaging in non-oncologic musculoskeletal radiology. Skeletal Radiol. 2024 Sep;53(9):1833-1846. PMID: 38492029. *(75th Anniversary).*

E. Book Chapters

71. DeBrosse C, **Kogan F,** Singh A, Haris M, Nanga RP, Crescenzi R, Hariharan H, Reddy R. Creatine Chemical Exchange Saturation Transfer Imaging. 2016. In: McMahon M, Bulte J, Gilad A. Chemical Exchange Saturation Transfer Imaging: Advances and Applications. *CRC Press*
72. Yoon D, **Kogan F**, Gold G, Biswal S. Identifying Pain Generators Using Molecular Imaging. 2021. In: Gambhir S, Ross B. Molecular Imaging. *Elsevier: 1373-1392*

F. Invited Articles

73. Biswal S, **Kogan F.** PET/MR for Identifying Pain Generation in Sports Medicine. *GE SIGNA: Return to Play*. 2021:31;40-44.

G. Conference Abstracts

1. **Kogan F**, Choe R, Yodh A. Correlation of Diffuse Optical Tomography with Histopathology and Magnetic Resonance Imaging. HHMI Interfaces conference. September 2008. Washington, D.C.
2. Cai K, Haris M, Singh A, **Kogan F**, Waghray P, Witschey W, Hariharan H, Detre J, Reddy R. Magnetic Resonance Imaging of the Neurotransmitter GABA in-Vivo. Proceedings of the 18th Annual Meeting of ISMRM, Stockholm, Sweden 2010
3. Haris M, Cai K, Singh A, **Kogan F**, Witschey W, Hariharan H, Reddy R. Detection of Myo-Inositol In-Vivo Using MR Chemical Exchange Saturation Transfer Imaging. Proceedings of the 18th Annual Meeting of ISMRM, Stockholm, Sweden 2010 **(Oral Presentation)**
4. **Kogan F,** Witschey W, Cai K, Haris M, Reddy R. Comparison of chemical exchange saturation transfer (CEST) and T1ρ MRI for measurement of proton chemical exchange between metabolites and water at 7T. Proceedings of the 18th Annual Meeting of ISMRM, Stockholm, Sweden 2010
5. **Kogan F,** Witschey W, Cai K, Haris M, Reddy R. Detection of proton chemical exchange between metabolites and water using T1ρ. Proceedings of the 18th Annual Meeting of ISMRM, Stockholm, Sweden 2010
6. **Kogan F**, Witschey W, Singh A, Cai K, Haris M, Reddy R. Spin-Lock MRI for the detection of metabolites by proton exchange. *NIBIB Training Grantees Meeting,* June 2010. Bethesda, Maryland
7. Cai K, Haris M, Singh A, **Kogan F**, Witschey W, Waghray P, Greenberg JH, Hariharan H, Detre J, Reddy R. MRI of Glutamate Modulation In vivo. Proceedings -19th Annual Meeting of ISMRM, Montreal, Canada 2011
8. Fenty M, Kassey V, **Kogan F**, Reddy R. Feasibility of CEST Imaging on the Guinea Pig Stifle at 9.4T. Proceedings of the 19th Annual Meeting of ISMRM, Montreal, Canada 2011
9. **Kogan F**, Singh A, Cai K, Haris M, Hariharan H, Reddy R. CESTrho: A New Method for Studying Chemical Exchange at Intermediate Exchange Rates. Proceedings of the 19th Annual Meeting of ISMRM, Montreal, Canada 2011 **(Oral Presentation)**
10. **Kogan F**, Singh A, Cai K, Haris M, Hariharan H, Reddy R. Chemical Exchange Saturation Transfer (CEST) Imaging of the Spinal Cord at 7T. *NIBIB Training Grantees Meeting,* Bethesda, Maryland 2012

11. Singh A, Haris M, Cai K, Kassey V, **Kogan F**, Hariharan H, Reddy R. CEST MRI of Human Knee Cartilage at 3T and 7T. P*roceedings of the 20th Annual Meeting of ISMRM*, Melbourne, Australia 2012.
12. **Kogan F**, Singh A, Haris M, Cai K, Hariharan H, Reddy R. Chemical Exchange Contrast with Off-Resonance Spin Locking. *Proceedings 20th Annual Meeting of ISMRM*, Melbourne, Australia 2012.
13. **Kogan F**, Singh A, Haris M, Cai K, Hariharan H, Reddy R. Imaging of Glutamate in the Spinal Cord using Chemical Exchange Saturation Transfer (CEST) at 7T. *Proceedings of the 20th Annual Meeting of ISMRM,* Melbourne, Australia 2012. **(Oral Presentation)**
14. Haris M, Nath K, Cai K, Singh A, Crescenzi R, **Kogan F**, Verma G, Reddy S, Hariharan H, Melhelm E, Reddy R. Imaging of Glutamate Alterations in Alzheimer's Disease. *Proceedings of the 21st Annual Meeting of ISMRM,* Salt Lake City, Utah 2013.
15. Haris M, Singh A, Cai K, Nath K, **Kogan F**, Hariharan H, Detre J, Epperson N, Reddy R. High Resolution Mapping of Modafinil Induced Changes in Glutamate Level in Rat Brain. *Proceedings of the 21st Annual Meeting of ISMRM,* Salt Lake City, Utah 2013.
16. Haris M, Singh A, Cai K, **Kogan F**, Witschey W, Zsido G, McGarvey J, Nanga R, Contijach F, Pilla J, Chirinos J, Gorman J, Ferrari V, Hariharan H, Gorman R, Reddy R. Z-Spectrum Fitting for CEST Contrast Computation in In Vivo Myocardium Tissue. *Proceedings of the 21st Annual Meeting of ISMRM,* Salt Lake City, Utah 2013.
17. DeBrosse C, **Kogan F,** Haris M, Singh A, Cai K, Nanga RP, Hariharan H, Reddy R. Feasibility of in vivo CEST Imaging of Cr (CrCEST) at 3T. *Proceedings of the 21st Annual Meeting of ISMRM,* Salt Lake City, Utah 2013.
18. **Kogan F**, Stafford R, Haris M, Englund E, Singh A, Cai K, DeBrosse C, Nanga RP, Hariharan H, Detre J, Reddy R. Contribution of Tissue Perfusion to the CEST Effect from Creatine in Skeletal Muscle. *Proceedings of the 21st Annual Meeting of ISMRM,* Salt Lake City, Utah 2013.
19. **Kogan F**, Haris M, Singh A, Cai K, Nanga RP, Hariharan H, Reddy R. Correlation of Exercise Induced Changes in Cr CEST and 31P MRS in Human Calf Muscles. *Proceedings of the 21st Annual Meeting of ISMRM,* Salt Lake City, Utah 2013. - **(Oral Presentation)**
20. Singh A, Nanga RP, Haris M, Cai K, **Kogan F**, Hariharan H, Reddy R. Transverse Relaxation Amplified by Chemical Exchange (TRACE): A New Method for Mapping Molecular Integrity of Cartilage. *Proceedings of the 22nd Annual Meeting of ISMRM,* Milan, Italy 2014
21. Cai K, Hariharan H, Singh A, Haris M, D'Aquilla K, Nanga RP, **Kogan F,** Reddy R. Optimization of 3D Turbo GluCEST MRI of Healthy Brain at 7T. *Proceedings of the 22nd Annual Meeting of ISMRM,* Milan, Italy 2014 **(Oral Presentation)**
22. Haris M, Singh A, Mohammed I, Ittyerah R, Nath K, Nanga RP, DeBrosse C, **Kogan F**, Cai K, Poptani H, Reddy D, Hariharan H, Reddy R. GluCEST Imaging of Tumor Protease Activity. *Proceedings of the 22nd Annual Meeting of ISMRM,* Milan, Italy 2014 **(Oral Presentation)**
23. Matzat S, McWalter E, **Kogan F,** Chen W, Gold GE. Comparison of Quantitative T2 Mapping Techniques for Articular Cartilage. *Proceedings of the 22nd Annual Meeting of ISMRM,* Milan, Italy 2014 **(Oral Presentation)**
24. Kogan F, Rosenberg J, McWalter EJ, Park D, Matzat S, Prekins K, Tran C, Taylor MI, Sveinsson B, Newbould RD, Monu U, Wang H, Bangerter N, Gold GE. Quantitative MRI of Osteoarthritis for Multicenter Trials: Standardization Between Different Centers and Manufacturers. *Proceedings of the 22nd Annual Meeting of ISMRM,* Milan, Italy 2014
25. Fan A, **Kogan F,** Holley D, Iagaru A, Zaharchuk G, Gold G. Characterization of [18F]-FDG Uptake by Hybrid PET-MRI in Osteoarthritis of the Hip. *Proceedings of the 23rd Annual Meeting of ISMRM,* Toronto, Canada 2015.
26. **Kogan F,** Rosenberg J, Brazina S, Fan A, Holley D, Gold G. Effect of 16-Channel Flex Array Coil on PET Standardized Uptake Values for PET/MR Imaging of the knee. *Proceedings of the 23rd Annual Meeting of ISMRM,* Toronto, Canada 2015.

27. **Kogan F,** Hargreaves B, Gold G. Multi-Slice gagCEST Sequence for Whole-Joint gagCEST mapping: Application to Articular Cartilage in the Ankle. *Proceedings of the 23rd Annual Meeting of ISMRM,* Toronto, Canada 2015.
28. **Kogan F,** Fan A, Brazina S, Holley D, Quon A, Gold G. 18F-FDG and 18F-NaF PET/MR Imaging of Osteoarthritis in the Knee: Considerations and Initial Results. *Proceedings of the 23rd Annual Meeting of ISMRM,* Toronto, Canada 2015. - **(Oral Presentation)**
29. **Kogan F**, Hargreaves B, Gold G. Volumetric GagCEST Imaging: Optimization and Comparison with T1rho. *8th International Workshop on Osteoarthritis Imaging*, Pacific Grove, USA 2015.
30. **Kogan F**, Fan A, Quon A, Gold G. PET-MR Imaging of Osseous and Inflammatory Metabolic Activity Post Knee Injury. *8th International Workshop on Osteoarthritis Imaging*, Pacific Grove, USA 2015. - **(Oral Presentation)**
31. Fan A, Kogan F, Patel A, Quon A, Oei E, Gold G. Dynamic imaging of [18f]-fluoride uptake in knee osteoarthritis with PET-MRI. Osteoarthritis Research Society International, Amsterdam, Netherlands 2016.
32. **Kogan F**, Fan A, McWalter E, Quon A, Oei E, Gold G. PET-MR Imaging of Metabolic Activity in Knee Osteoarthritis. *Osteoarthritis Research Society International, Amsterdam*, Netherlands 2016.
33. Monu U, **Kogan F**, McWalter E, Hargreaves B, Gold G. A method to quantitatively compare bone and cartilage changes post knee injury: Initial results. *Proceedings of the 24rh Annual Meeting of ISMRM,* Singapore, Singapore 2016. - **(Oral Presentation)**
34. Fan A, **Kogan F**, Patel A, Oei E, Quon A, Gold G. Dynamic analysis of [18F]-sodium fluoride uptake in knee osteoarthritis with PET-MRI. *Proceedings of the 24rh Annual Meeting of ISMRM,* Singapore, Singapore 2016. - **(Oral Presentation)**
35. Gold G, Sveinsson B, Epperson K, Chaudhari A, Alley M, Yoon D, Hargreaves B, **Kogan F.** Comparison of DESS T2 Relaxation times and apparent diffusion coefficient in articular cartilage at 3T and 7T. *Proceedings of the 24rh Annual Meeting of ISMRM,* Singapore, Singapore 2016. - **(Oral Presentation)**
36. **Kogan F**, Fan A, McWalter E, Oei E, Quon A, Gold G. Correlation of Bone Pathology on MRI with 18F-fluoride PET Uptake in Subchondral Bone. *Proceedings of the 24rh Annual Meeting of ISMRM,* Singapore, Singapore 2016. - **(Oral Presentation)**
37. **Kogan F**, Fan A, McWalter E, Quon A, Oei E, Gold G. 18F-Fluoride PET-MR Imaging of Metabolic Bone Activity in Knee Osteoarthritis. *Proceedings of the 2016 SNMMI Annual Meeting,* San Diego, CA 2016. - **(Oral Presentation)**
38. **Kogan F**, Fan A, McWalter E, Quon A, Oei E, Gold G. Assessment of Metabolic and Structural Bone Abnormalities in Knee Osteoarthritis with Simultaneous PET and MR Imaging. *RSNA Annual Meeting,* Chicago, IL 2016. - **(Oral Presentation)**
39. **Kogan F**, Levine E, Monu U, Chaudhari A, Gold GE, Hargreaves BA. Feasibility of Simultaneous Bilateral Knee Imaging with a Dual-Coil Setup. *Proceedings of 25th Annual Meeting of ISMRM,* Honolulu, HI 2017
40. **Kogan F,** Fan A, McWalter E, Monu U, Oei E, Quon A, Gold G. PET/MR Imaging of Metabolic Activity in Osteoarthritis. *Proceedings of 25th Annual Meeting of ISMRM,* Honolulu, HI 2017 – **(Young Investigator Award Finalist - Oral)**
41. **Kogan F,** Fan A, McWalter E, Monu U, Oei E, Gold G. Quantitative Imaging of Bone-Cartilage Interactions after ACL Injury with PET-MRI. *ISMRM Workshop on Osteoarthritis,* Sydney, Australia 2017 – **(Oral Presentation)**
42. **Kogan F,** Fan A, Gold G. Imaging Early Bone-Cartilage Interactions in Knee Osteoarthritis with PET-MRI**.** *World Molecular Imaging Congress,* Philadelphia, PA 2017 – **(Oral Presentation)**
43. Haddock B, Fan A, Suetta C, **Kogan F,** Gold G. Assessment of acute bone loading in humans using [18F]-NaF PET - a PET/MRI pilot study. *European Association of Nuclear Medicine Annual Meeting*, Vienna, Austria 2017

44. **Kogan F,** Fan A, Hargreaves B, Gold G. PET-MR Imaging of Bone Metabolism & Bone-Cartilage Interactions in Early Osteoarthritis. *ISMRM-SNMMI Co-Provided Workshop on PET/MRI*, Chicago, IL 2017 – **(Oral Presentation)**
45. Chaudhari AS, Sveinsson B, Wood JP, Stevens KJ, Beaulieu CF, Oei EH, Rosenberg J, Levine EG, **Kogan F**, Alley MT, Gold GE, Hargreaves BA. Diagnostic Comparison of Two High-Value Diagnostic and Quantitative Rapid Knee MRI Protocols. *ISMRM and RSNA Co-Provided Workshop on High-Value MRI*, Washington, DC 2018. – **(Oral Presentation)**
46. **Kogan F,** Chaudhari A, Levine E, Epperson K, Oei E, Gold G, Hargreaves B. Feasibility of Simultaneous Bilateral Knee Imaging for Enhanced Value Osteoarthritis Studies. ISMRM-RSNA Co-Provided Workshop on High-Value MRI, Washington, DC 2018 – **(Oral Presentation)**
47. Black M, Xiao M, Watkins L, **Kogan F,** Rosenberg J, Gold G, Levenston M, Hargreaves B. Choice of Ex Situ Scan Environment Can Substantially and Differentially Alter Quantitative MRI Values of Bovine Menisci. *Orthopaedic Research Society 2018 Annual Meeting*, New Orleans, LA 2018
48. **Kogan F,** Fan A, Black M, Hargreaves B, Gold G. Imaging of Bone Metabolism and Its Spatial Relationship with Cartilage Matrix Changes in ACL-Injured Patients. *Orthopaedic Research Society 2018 Annual Meeting*, New Orleans, LA 2018
49. Chaudhari A, Fang Z, **Kogan F,** Gibbons E, Wood J, Stevens K, Lee JH, Gold G, Hargreaves B. Deep-Learning-Based Super-Resolution and Segmentation for Clinical and Research Musculoskeletal MRI. *ISMRM Workshop on Machine Learning*, Pacific Grove, CA. 2018.
50. Chaudhari A, Fang Z, **Kogan F,** Gibbons E, Wood J, Stevens K, Lee JH, Gold G, Hargreaves B. Enhancing MRI Resolution and Fully-Automating Tissue Segmentation Using Deep Learning. *NVIDIA GPU Technology Conference*, San Jose, CA. 2018.
51. Black MS, Young K, Chaudhari A, Sveinsson B, **Kogan F,** Monu U, McWalter E, Levenston M, Gold GE, Hargreaves BA. T2-mapping of Femoral Cartilage 3-months Following ACL Reconstruction Surgery. *Proceedings of 26th Annual Meeting of ISMRM*, Paris, France 2018
52. Watkins L, **Kogan F,** Black M, Levenston M, Gold G. Quantitative GagCEST MRI in Juvenile Bovine Articular Cartilage Exhibit Correlations between 3T and 7T. *Proceedings of 26th Annual Meeting of ISMRM*, Paris, France 2018
53. Haddock B, **Kogan F,** Fan A Suetta C, Gold G. Image derived arterial input function using popliteal artery for [18F]-sodium fluoride (NaF) PET/MRI. *Proceedings of 26th Annual Meeting of ISMRM*, Paris, France 2018
54. Langner J, **Kogan F,** Haddock B, Gold G. Measurement of Acute Changes in Articular Cartilage T2 Relaxation Times Immediately After Exercise. *Proceedings of 26th Annual Meeting of ISMRM*, Paris, France 2018
55. Young K, **Kogan F,** Peters R, Koff M, Pedoia V, Safran M, Ma B, Williams R, Wickiewicz T, Black M, Sabol J, Amrami K, Potter H, Majumdar S, Gold G. Advanced Knee Imaging Study in NCAA Division 1 Basketball: Protocol Development and Preliminary Results. *Proceedings of 26th Annual Meeting of ISMRM*, Paris, France 2018
56. Chaudhari A, Fang Z, **Kogan F,** Wood J, Stevens K, Lee J, Gold GE, Hargreaves BA. Super-Resolution Musculoskeletal MRI using Deep Learning. *Proceedings of 26th Annual Meeting of ISMRM*, Paris, France 2018 – **(Oral Presentation)**
57. Chaudhari AS, Sveinsson B, Wood JP, Stevens KJ, Beaulieu CF, Oei EH, Rosenberg J, Levine EG, **Kogan F,** Alley MT, Gold GE, Hargreaves BA. Diagnostic Comparison of Two Rapid Knee MRI Protocols for Comprehensive Whole-Joint Assessment: A Multi-Reader Feasibility Study. *Proceedings of 26th Annual Meeting of ISMRM*, Paris, France 2018 – **(Oral Presentation)**
58. **Kogan F**, Levine E, Chaudhari A, Monu U, Epperson K, Oei E, Gold G, Hargreaves B. Simultaneous Bilateral Knee MR Imaging. *Proceedings of 26th Annual Meeting of ISMRM*, Paris, France 2018 – **(Oral Presentation)**

59. **Kogan F**, Chaudhari A, Black M, Epperson Ke, Epperson Ka, Gold G, Hargreaves B. High Patient Throughput 5-Minute Comprehensive Quantitative Bilateral Knee MRI. *12th International Workshop on Osteoarthritis Imaging*, Menton, France 2018 - **(Oral Presentation)**
60. Rubin E, Watkins L, Mazzoli V, Desai A, Ho G, **Kogan F**, Uhlrich S, Kolesar J, Delp S, Beaupre G, Gold G. GagCEST MRI at 3T Can Detect Cartilage Differences Between Healthy and Osteoarthritic Subjects. *OARSI World Congress on Osteoarthritis*, Toronto, Canada 2019
61. Mazzoli V, Uhlrich S, Rubin E, **Kogan F**, Hargreaves B, Delp S, Beaupre G, Gold G. Gait Retraining as a Conservative Treatment for Medial Knee Osteoarthritis. *OARSI World Congress on Osteoarthritis*, Toronto, Canada 2019
62. Watkins L, **Kogan F**, Rubin E, Black M, Levenston M, Gold G. Evaluating the Relationship Between gagCEST MRI and Cartilage Biochemical Composition in Juvenile Bovine Articular Cartilage. *OARSI World Congress on Osteoarthritis*, Toronto, Canada 2019
63. **Kogan F**, Haddock B, Fan A, Jorgensen N, Suetta C, Gold G. [^{18}F]-Sodium Fluoride Imaging of Bone Metabolism After Acute Loading. *OARSI World Congress on Osteoarthritis*, Toronto, Canada 2019
64. Crowder H, Mazzoli V, Black M,Watkins L, **Kogan F**, Hargreaves B, Levenston M, Gold G. Short Term Effects of Running on the T2 Relaxation Times of Femoral Cartilage in Female Runners. *Proceedings of 27th Annual Meeting of ISMRM*, Montreal, Canada 2019.
65. Watkins L, **Kogan F**, Rubin E, Black M, Levenston M, Gold G. Evaluating the Relationship Between gagCEST MRI and Cartilage Biochemical Composition in Juvenile Bovine Articular Cartilage. *Proceedings of 27th Annual Meeting of ISMRM*, Montreal, Canada 2019.
66. Black MS, Yoon D, Young K, Chaudhari A, **Kogan F,** Gold GE, Levenston M, Hargreaves BA. Detecting Early Changes in ACL-Reconstructed Knee Cartilage: Cluster Analysis of T2 Relaxation Times in Superficial and Deep Cartilage and ADC Analysis. *Proceedings of 27th Annual Meeting of ISMRM*, Montreal, Canada 2019.
67. Barbieri M, Desai A, **Kogan F**, Mazzoli V, Rubin E, Castellani G, Gold G, Hargreaves B, Chaudhari A. Rapid Quantitative Simultaneous Bilateral Knee Imaging with Fully Automated Femoral Cartilage Analysis: Toward Knee Asymmetry Evaluation. *Proceedings of 27th Annual Meeting of ISMRM*, Montreal, Canada 2019.
68. Rubin E, Watkins L, Mazzoli V, Desai A, Ho G, **Kogan F**, Uhlrich S, Kolesar J, Delp S, Beaupre G, Gold G. GagCEST MRI at 3T Can Detect Cartilage Differences Between Healthy and OA Subjects. *Proceedings of 27th Annual Meeting of ISMRM*, Montreal, Canada 2019. - **(Oral Presentation)**
69. Mazzoli V, Uhlrich S, Rubin E, **Kogan F**, Hargreaves B, Delp S, Beaupre G, Gold G. Gait Retraining as a Conservative Treatment for Medial Knee OA: preliminary findings. *Proceedings of 27th Annual Meeting of ISMRM*, Montreal, Canada 2019. - **(Oral Presentation)**
70. **Kogan F,** Watkins L, Thoenen J, Larson P, Gold G. Minimized PET Attenuation in PET-MRI Knee Scanning with Flexible, Screen-Printed MR Coils. *Proceedings of 27th Annual Meeting of ISMRM*, Montreal, Canada 2019.
71. MacKay JW, Watkins LE, **Kogan F**, Sanaei F, Kaggie J, Khan W, McDonnell SM, Morgan-Roberts AR, Janiczek RL, Naish J, Parker GJM, Graves MJ, McCaskie AW, Gilbert FJ, Gold, GE. Imaging of Bone-Synovium Interactions Using Dynamic Contrast Enhanced MRI And Sodium Fluoride PET. *2019 International Workshop on Osteoarthritis Imaging,* Prince Edward Island, Canada 2019
72. Black MS, Young K, Chaudhari AS, **Kogan F**, Gold GE, Levenston ME, Hargreaves BA. Detecting Early Superficial and Deep Changes in Cartilage Of ACL-Reconstructed Knees Using Cluster Analysis of T2 Relaxation Times. *2019 International Workshop on Osteoarthritis Imaging,* Prince Edward Island, Canada 2019 - **(Oral Presentation)**
73. Chaudhari A, Grissom M, Stevens K, Fang Z, Desai A, **Kogan F**, Lee J.H., Gold G, Hargreaves B. Deep Learning Enables Rapid Quantitative MRI of OA With Automatic Analysis. *2019 International Workshop on Osteoarthritis Imaging,* Prince Edward Island, Canada 2019 - **(Oral Presentation) – YIA Winner**

74. **Kogan F**, Uhlrich SD, Berkson M, Chaudhari A, Black M, Mazzoli V, Gold GE, Hargreaves BA. Rapid Whole-Leg MRI For Assessment of Leg Alignment. *2019 International Workshop on Osteoarthritis Imaging,* Prince Edward Island, Canada 2019 - **(Oral Presentation)**
75. Watkins L, Haddock B, Uhlrich S, Mazzoli V, Gold GE**, Kogan F**. Sodium Fluoride PET-MRI Detects Regions of Abnormal Bone Response to Acute Exercise. *2019 International Workshop on Osteoarthritis Imaging,* Prince Edward Island, Canada 2019 - **(Oral Presentation)**
76. Boutin RD, Stevens K, Chaudhari A, **Kogan F**, Foster B, Mazzoli V, Gold G**.** *Fast Musculoskeletal MRI: What the Radiologist Needs to Know***,** Educational Exhibit, Radiological Society of North America, Chicago, Illinois 2019 MK296-ED-X **(RSNA cum Laude Award)**
77. Black MS, Young K, Chaudhari A, Kogan F, Gold G, Levenston M, Hargreaves B. T2 Cluster Analysis Of ACL-reconstructed Knees: Detecting Superficial and Deep Changes To Femoral And Tibial Cartilage Over 18-months Post-surgery. *2020 ORS Annual Meeting*, Phoenix, Arizona 2020 – **(Oral Presentation)**
78. **Kogan F**, Uhlrich S, Berkson M, Chaudhari A, Black M, Mazzoli V, Watkins L, Gold G, Hargreaves B. Feasibility of Rapid MRI Assessment of Leg Alignment. *28th Annual Meeting of the ISMRM*, Virtual 2020
79. MacKay J, Watkins L, Gold G, **Kogan F**. Imaging of Bone-Synovium Interactions Using Dynamic Contrast Enhanced MRI and ^{18}F-Sodium Fluoride PET. *28th Annual Meeting of the ISMRM*, Virtual 2020 **(Oral Presentation) [Magna Cum Laude Award]**
80. Hales L, **Kogan F**. Investigation into the effect of spin-lock frequency on the angular dependence of T1rho in in-vivo measurements of femoral knee cartilage at 3T. *28th Annual Meeting of the ISMRM*, Virtual 2020
81. Sandford JC, Black M, Chaudhari AS, Desai A, **Kogan F**, Hargreaves BA, Gold GE, Mazzoli V. Detecting Early Changes in ACL-Reconstructed Knee Cartilage Using Diffusion-Weighted MRI. *28th Annual Meeting of the ISMRM*, Virtual 2020
82. Mazzoli V, Moulin K, **Kogan F**, Hargreaves B, Gold GE. Imaging of skeletal muscle contraction using Oscillating Gradient Spin Echo (OGSE). *28th Annual Meeting of the ISMRM*, Virtual 2020 **(Oral Presentation)**
83. Watkins L, Mazzoli V, Black M, Uhlrich S, Hargreaves B, Gold G, **Kogan F**. Cluster analysis of T2 changes is related to acute exercise in individuals with knee osteoarthritis. *28th Annual Meeting of the ISMRM*, Virtual 2020
84. Hall ME, Mazzoli V, Black M, Sandford JC, Young K, Yoon D, Sveinsson B, Chaudhari AS, McWalter E, **Kogan F**, Levenston M, Hargreaves BA, Gold GE. qDESS ADC as a Biomarker for Early Degeneration in Femoral Cartilage of Post-Reconstruction ACL Tear Patients and Correlation with DWI-EPI ADC. *28th Annual Meeting of the ISMRM*. 2020, Virtual 2020
85. Rubin EB, Mazzoli V, Black M, Desai A, Young K, **Kogan F**, Sreedhar A, Vincentini J, Knox KA, Tamada T, McCabe A, Safran M, Majumdar S, Potter HG, Gold GE. Longitudinal Analysis of Knee Articular Cartilage in Collegiate Basketball Players and Swimmers: Preliminary Results. *28th Annual Meeting of the ISMRM*, Virtual 2020
86. Crowder H. Mazzoli V, Black M, Watkins L, **Kogan F**, Hargreaves B, Levenston M, Gold GE. Short Term Effects of Running on Knee Cartilage: Global and Regional T2 Relaxation Times in Femoral Cartilage of Female Recreational Runners. *28th Annual Meeting of the ISMRM*, Virtual 2020
87. Young K, Rubin E, **Kogan F**, Black MS, Gao M, Sa bol JM, Safran M, Koff MF, Potter H, Majumdar S, Gold G. Advanced Knee Imaging Study in NCAA Division 1 Basketball Update: Study Design and Considerations for Multi-Site Longitudinal Study. *28th Annual Meeting of the ISMRM*, Virtual 2020
88. Mazzoli V, Watkins LE, Rubin EB, Hargreaves B, **Kogan F**, Gold GE. Diffusion tensor imaging of articular cartilage at 3T: repeatability and sensitivity to degenerative changes. *28th Annual Meeting of the ISMRM*, Virtual 2020
89. Gao K, Pedoia V. Tibrewala R, Young K, **Kogan F**, Koff MF, Gold GE, Potter H, Majumdar S. Compositional and Morphological Characterization of Knee Articular Cartilage in Collegiate Basketball Players using Multiparametric MRI. *28th Annual Meeting of the ISMRM*, Virtual 2020 **(Oral Presentation) [Magna Cum Laude Award]**

90. Langner JL, Black M, MacKay J, Hall K, Safran M, **Kogan F**, Gold G. Increased Prevalence of Femoroacetabluar Impingement Anatomy Among Athletes Who Tread Water. *28th Annual Meeting of the ISMRM*, Virtual 2020
91. Black MS, Young KA, Chaudhari AS, **Kogan F**, Sveinsson B, McWalter EJ, Gold GE, Hargreaves BA. Bilateral Femoral Cartilage T_2 Asymmetry Analysis for the Detection of Early Osteoarthritic Degeneration. *28th Annual Meeting of the ISMRM*, Virtual 2020 **(Oral Presentation) [Magna Cum Laude Award]**
92. Watkins L, MacKay J, Haddock B, Mazzoli V, Uhlrich S, Gold G, **Kogan F**. Evaluating the Relationship Between Dynamic [^{18}F]-Sodium Fluoride Uptake Parameters and MRI Knee Osteoarthritic Findings. *28th Annual Meeting of the ISMRM*, Virtual 2020 **(Oral Presentation) [Summa Cum Laude Award, MSK Study Group Best Abstract Award]**
93. Black MS, Young KA, Chaudhari AS, **Kogan F**, Sveinsson B, McWalter EJ, Gold GE, Levenston ME, Hargreaves BA. Detecting Early Changes in ACL-Reconstructed Knees: Cluster Analysis of T_2 Relaxation Times from 3 Months to 18 Months Post-Surgery. *28th Annual Meeting of the ISMRM*, Virtual 2020
94. Thoenen J, MacKay JW, Chaudhari A, Watkins LE, Hargreaves B, **Kogan F**, Gold GE. Ideal Weighting Parameter for Non-Contrast Detection of Synovitis Using Diffusion-Weighted DESS. *28th Annual Meeting of the ISMRM*, Virtual 2020
95. Schmidt A, Desai A, Crowder H, Mazzoli V, Rubin E, Watkins L, Lu Q, Black M, **Kogan F**, Gold G, Hargreaves B, and Chaudhari A. Generalizability of Deep-Learning Segmentation Algorithms on Independent Datasets for Measuring T2 Relaxation Times. *28th Annual Meeting of the ISMRM*, Virtual 2020
96. Epperson K, Epperson K, Gold GE, **Kogan F**. 7T MRI: Clinical Benefits and Challenges. *29th Annual Meeting of the SMRT*, Virtual 2020
97. Watkins L, MacKay J, Haddock B, Mazzoli V, Uhlrich S, Gold G, **Kogan F**. Evaluating the Relationship between Dynamic Na[18F]F-Uptake Parameters and MRI Knee Osteoarthritic Findings. *Proceedings of the 2020 SNMMI Annual Meeting*. Virtual 2020 **(Oral Presentation)**
98. Watkins L, Haddock B, **Kogan F**. Effects of Dynamic Na[18F]F^- Duration on Uptake Parameters in the Knee. *Proceedings of the 2020 SNMMI Annual Meeting*. Virtual 2020 **(Oral Presentation)**
99. Sanford H, MacKay J, Watkins L, Gold G, **Kogan F**, Mazzoli V. Gadolinium-Free Assessment of Synovitis using Diffusion Tensor Imaging. *2020 International Workshop on Osteoarthritis Imaging,* Salzburg, Austria/Virtual 2020
100. Rubin E, Young K, Sreedhar A, Chaudhari A, **Kogan F**, Sveinsson B, McWalter E, Gold G, Levenston M, Hargreaves B, Black M. Changes in Patellar Cartilage After ACL Reconstruction Detected using T2 Relaxation Times. *2020 International Workshop on Osteoarthritis Imaging,* Salzburg, Austria/Virtual 2020
101. Watkins L, Haddock B, MacKay J, Mazzoli V, Uhlrich S, Gold G, **Kogan F**. Evaluating Changes in Bone Mineralization and Perfusion in Response to Acute Exercise in an Osteoarthritic Population. *2020 International Workshop on Osteoarthritis Imaging,* Salzburg, Austria/Virtual 2020
102. Thoenen J, MacKay J, Stevens K, Turmazei T, Chaudhari A, Watkins L, Hargreaves B, Gold G, **Kogan F**. Non-Contrast MRI of Synovitis Using Quantitative DESS in the Knee. *2020 International Workshop on Osteoarthritis Imaging,* Salzburg, Austria/Virtual 2020
103. Black M, Younk K, Chaudhari A, **Kogan F**, Sveinsson B, McWalter E, Gold G, Levenston M, Hargreaves B. T2 Cluster Asymmetry Can Detect Differences in Cartilage of ACL-Injured Subjects 3 Months Post-Surgery. *2020 International Workshop on Osteoarthritis Imaging,* Salzburg, Austria/Virtual 2020 **(Oral Presentation)**
104. MacKay J, Watkins L, Gold G, **Kogan F.** Hybrid PET-MRI Reveals the Association Between Osteophyte Metabolic Activity and Adjacent Synovitis. *2020 International Workshop on Osteoarthritis Imaging,* Salzburg, Austria/Virtual 2020 **(Oral Presentation)**

105. Black MS, Young K, Chaudhari AS, **Kogan F**, Sveinsson B, McWalter EJ, Gold GE, Levenston ME, Hargreaves BA. Bilateral T2 Asymmetry Analysis Detects Early Superficial and Later Deep Cartilage Changes Following ACL-Reconstruction Surgery. *Osteoarthritis Research Society Annual Meeting.* Virtual 2021
106. Rubin EB, Young K, Chaudhari AS, Sreedhar A, **Kogan F**, Sveinsson B, McWalter EJ, Gold GE, Levenston ME, Hargreaves BA, Black MS. T2 Relaxation Times in the Patella Identify Differences between Healthy and ACL-Injured Individuals and Graft Types. *Osteoarthritis Research Society Annual Meeting.* Virtual 2021
107. Sanford H, MacKay J, Watkins L, Gold G, **Kogan F**, Mazzoli V. Gadolinium-Free Assessment of Synovitis Using Diffusion Tensor Imaging. *2021 Annual Meeting of the ISMRM*. Virtual 2021
108. Rubin E, Langner J, Black M, Desai A, MacKay K, Jones C, Hall K, Safran M, **Kogan F**, Gold G. Regional Variations in T2 Relaxation Times in the Hip Cartilage of Female Water Polo Players and Synchronized Swimmers. *2021 Annual Meeting of the ISMRM*. Virtual 2021
109. Hess J, Black M, **Kogan F**, Hargreaves B. SNR of Flexible Versus Rigid Coil Arrays for Knee MRI. *2021 Annual Meeting of the ISMRM*. Virtual 2021
110. Watkins L, Schmidt A, Rubin E, Barbieri M, Desai A, Mazzoli V, Gold G, Hargreaves B, Chaudhari A, **Kogan F**. Examining longitudinal and activity-based variability of femoral cartilage T2 relaxation times in healthy subjects. *2021 Annual Meeting of the ISMRM*. Virtual 2021
111. Schmidt A, Desai A, Crowder H, Mazzoli V, Rubin E, Watkins L, Liu Q, Black M, **Kogan F**, Gold G, Hargreaves B, Chaudhari A. Generalizability of Deep-Learning Segmentation Algorithms for Measuring Cartilage Morphology and T_2 Relaxation Times. *2021 Annual Meeting of the ISMRM*. Virtual 2021 **(Oral Presentation)**
112. Thoenen J, MacKay J, Stevens K, Turmesezi T, Chaudhari A, Watkins L, McWalter E, Hargreaves B, Gold G, **Kogan F**. Non-Contrast MRI of Synovitis in the Knee Using Quantitative DESS. *2021 Annual Meeting of the ISMRM*. Virtual 2021
113. Thoenen J, MacKay J, Stevens K, Turmesezi T, Chaudhari A, Watkins L, Hargreaves B, Gold G, **Kogan F**. A Comparison of Synovitis Severity in the Knee Assessed Using Contrast-Enhanced MRI and FDG-PET. *2021 Annual Meeting of the ISMRM*. Virtual 2021
114. Barbieri M, Chaudhari A, Moran C, Gold G, Hargreaves B, **Kogan F**. A Method for Measuring B0 Field Inhomogeneity using Quantitative DESS(qDESS). *2021 Annual Meeting of the ISMRM*. Virtual 2021 **(Oral Presentation)**
115. Barbieri M, Watkins L, Desai A, Mazzoli V, Rubin E, Schmidt A, Gold G, Hargreaves B, Chaudhari A, **Kogan F**. B1 Field Inhomogeneity Correction for qDESS T2 Mapping: Application to Rapid Bilateral Knee Imaging. *2021 Annual Meeting of the ISMRM*. Virtual 2021
116. Goyal A, Gold G, **Kogan F**, Watkins L. Changes in meniscus T2 relaxation times due to acute exercise in individuals with knee osteoarthritis. *2021 Annual Meeting of the ISMRM*. Virtual 2021
117. Watkins L, Mackay J, **Kogan F**. Areas of Altered [^{18}F]NaF PET Uptake in Response to Exercise Show OA Progression on MRI Over 2 Years. *2021 International Workshop on Osteoarthritis Imaging,* Rotterdam, NL **(Oral Presentation)**
118. Uhlrich S, Mazzoli M, Silder A, Finlay A, **Kogan F**, Gold G, Delp S, Beaupre G, Kolesar J. Personalized gait modifications improve pain and slow cartilage degeneration in individuals with medial knee osteoarthritis: a one-year randomized controlled trial. *XXVIII Congress of International Society of Biomechanics.* Stockholm, Sweden 2021
119. Mazzoli V, Rubin E, Barbieri M, Schmidt A, Watkins L, Chaudhari A, **Kogan F**, Gold G. Muscle Hypertrophy in Resistance Training Assessed with Diffusion Tensor Imaging. *31st Annual Meeting of ISMRM, London, UK, 2022* **(Oral Presentation)**
120. Mazzoli V, Uhlrich S, **Kogan F**, Silder A, Finlay A, Delp S, Beaupre G, Kolesar J, Gold G. T1rho can detect microstructural changes in cartilage induced by conservative interventions: a one-year randomized controlled trial. *31st Annual Meeting of ISMRM, London, UK, 2022* **(Oral Presentation)**

121. Mazzoli V, **Kogan F**, *Intra-voxel Incoherent motion (IVIM) to study synovitis in OA*: a feasibility study. *31st Annual Meeting of ISMRM, London, UK, 2022*
122. Barbieri M, Watkins L, Haddock B, Gold G, **Kogan F**. Exploratory study of relationships between [^{18}F] Sodium fluoride PET metabolic bone measures and MRI bone porosity index in the tibial tuberosity. *31st Annual Meeting of ISMRM, London, UK, 2022* **(Oral Presentation)**
123. Barbieri M, Hoojimans M, Gold G, **Kogan F**, Mazzoli V. A Neural Network Application for Fast Simultaneous Muscle T2-Water and Fat Fraction Mapping from Multi-Spin-Echo Acquisitions. *31st Annual Meeting of ISMRM, London, UK, 2022* **(Oral Presentation)**
124. Baker J, MacKay J, **Kogan F**, Watkins L. Metabolic bone response to exercise loading is predictive of joint degeneration after 2 years in OA knees. *31st Annual Meeting of ISMRM, London, UK, 2022*
125. Rubin EB, Langner J, Black MS, Desai A, MacKay J, Jones C, Hall KE, Safran MR, **Kogan F**, Gold GE. *FAI Bone Morphology Correlates with Increased T2 Relaxations Times in the Hip Cartilage of Female Water-Treading Athletes. 31st Annual Meeting of ISMRM, London, UK, 2022*
126. Goyal A, Beaulieu C, Fung M, Kolupar T, Chaudhari A, Stevens K, **Kogan F**. *Comparison of New MR Approaches for Accelerated Knee Imaging. 31st Annual Meeting of ISMRM, London, UK, 2022*
127. Schmidt A, Rubin E, Ko M, Watkins L, Barbieri M, Hales L, Gold G, Delp S, **Kogan F**, Mazzoli V, and Chaudhari A. *Evaluating Structural and Functional Lower-limb Asymmetries through MRI and Wearable Sensors. 31st Annual Meeting of ISMRM, London, UK, 2022*
128. Ko M, Schmidt A, Rubin E, Watkins L, Barbieri M, Hales L, Gatti A, Gold G, **Kogan F**, Delp S, Mazzoli V, and Chaudhari A. *Effect of Resistance Training on Lower-Extremity Gait Kinematics and Muscle Morphology. 31st Annual Meeting of ISMRM, London, UK, 2022*
129. Asay J, Gatti A, Desai A, Chaudhari A, Mazzoli V, **Kogan F**, Gold G. Repeatability of Cartilage T_2 relaxation times measures at 3T and 7T using quantitative double-echo in steady-state. *31st Annual Meeting of ISMRM, London, UK, 2022*
130. Hales L, Sandino C, Mazzoli V, **Kogan F**. Three-Dimensional real-time dynamic knee MRI using 3D cones with a multiscale low-rank reconstruction. *31st Annual Meeting of ISMRM, London, UK, 2022*
131. Gatti A, Haddock B, Alcantara R, St. Pierre S, Peirlinck M, Uhlrich S, Kuhl E, Suetta C, Gold G, Hicks J, Delp S, **Kogan F**. Validation of [^{18}F]-NaF PET as a measure of bone remodeling using finite element analysis. *North American Congress on Biomechanics*. Ottawa, CA 2022
132. Haddock B, Alcantara R, Gatti A, St. Pierre S, Peirlinck M, Kuhl E, Suetta C, Gold G, **Kogan F**. Acute response to bone loading in humans assessed using [^{18}F]-NaF PET/MRI. European Association of Nuclear Medicine Annual Meeting. Vienna, Austria 2022
133. Vainberg Y, Mazzoli V, **Kogan F**. Phantom T1rho and T2 relaxation times demonstrate good repeatability across sequences and scanner position. *32nd Annual Meeting of ISMRM, Toronto, CA, 2023*
134. Shoults G, Gold E, **Kogan F**, Mazzoli V. Diffusion Tensor Imaging of Swimmers' Supraspinati: Fiber Distinctions Between Sprint and Distance Freestyle. *32nd Annual Meeting of ISMRM, Toronto, CA, 2023*
135. Asay J, Balaji K, Gatti A, Desai A, Mendoza M, Huo Z, Chaudhari A, **Kogan F**, Lally P, Bangerter N, Gold GE. 7T cross-vendor repeatability study of cartilage T2 values using DOSMA on qDESS images. *32nd Annual Meeting of ISMRM, Toronto, CA, 2023*
136. Vainberg Y, Asay J, Schmidt A, Muccini J, Gold GE, **Kogan F**, Mazzoli V. Diffusion Tensor Imaging parameters predict quadriceps strength in younger and older healthy adults. *32nd Annual Meeting of ISMRM, Toronto, CA, 2023*
137. Pai A, Gatti A, Black M, Desai A, Rosenberg J, Young K, Asay J, Sherman S, Gold GE, **Kogan F**, Hargreaves B, Chaudhari A. 3D Cluster Analysis for Cartilage T2 And T1p Mapping to Assess Focal Lesions in ACL-Injured Subjects. *32nd Annual Meeting of ISMRM, Toronto, CA, 2023* **(Oral Presentation)**
138. Subramanian A, Watkins L, Gold G, **Kogan F**, Barbieri M. Preliminary investigation of a rapid proxy measure of T2* in cartilage using a double echo uTE. *32nd Annual Meeting of ISMRM, Toronto, CA, 2023*

139. Gomez L, Fung M, Nunes B, Pedoia V, Majumdar S, Chaudhari A, Desai A, Gatti A, **Kogan F**, Padron M. Evaluation of an accelerated Deep Learning-reconstructed T2 mapping technique through knee cartilage regional analysis using DOSMA framework. *32nd Annual Meeting of ISMRM, Toronto, CA, 2023* **(Oral Presentation)**
140. Goyal A, Barbieri M, Mazzoli V, **Kogan F**. Sensitivity of Bi-Exponential UTE-T2* to Tendon Laxity. Submitted to *32nd Annual Meeting of ISMRM, Toronto, CA, 2023*
141. Hales L, Desai A, Mazzoli V, Chaudhari A, **Kogan F**. De-noising of 4D real-time joint motion images using a convolutional neural network trained on static data. Submitted to *32nd Annual Meeting of ISMRM, Toronto, CA, 2023* **(Oral Presentation)**
142. Hales L, Goyal A, **Kogan F**. Increased accuracy in relaxometry estimates through statistical determination of the noise floor. Submitted to *32nd Annual Meeting of ISMRM, Toronto, CA, 2023*
143. Mazzoli V, Barbieri M, Vainberg Y, Li M, Middione M, Ennis D, **Kogan F**, Gold G. Microcirculation in aging skeletal muscle assessed with flow-compensated Intravoxel Incoherent Motion (IVIM). *32nd Annual Meeting of ISMRM, Toronto, CA, 2023* **(Oral Presentation)**
144. Goyal, A., Petterson, M., Van der Heijden, R., Stevens, K., Yoon, M., MacKay, J., Fung, M., **Kogan, F.** Comparison of New MR Approaches for Accelerated Knee Imaging. *International Workshop on Osteoarthritis Imaging (IWOAI).* Lausanne, CH. June 2023
145. Goyal, A., Vainberg, Y., Asay, J., Yoon, M., **Kogan, F.** Evaluation of Metabolic Response in Bone Marrow Lesions After Exercise in Relation to Changes in Adjacent Cartilage T2 Values. *International Workshop on Osteoarthritis Imaging (IWOAI).* Lausanne, CH. June 2023 **(Best Abstract Award Winner)**
146. Gatti AA, **Kogan F**, Gold GE, Delp SL, Chaudhari AS. Neural Shape Models Encode Bone Shape Features Not Captured By Statistical Shape Models. *International Workshop on Osteoarthritis Imaging (IWOAI).* Lausanne, CH. June 2023
147. Barbieri M, Gatti AA, **Kogan F.** Improving Accuracy and Repeatability of T2 Mapping in the OAI DATA Through Extended Phase Graph Modeling. *International Workshop on Osteoarthritis Imaging (IWOAI).* Lausanne, CH. June 2023 Barbieri M, Liao C, Cao X, Yang Y, Setsompop K, **Kogan F**. Feasiblity of Bone Porosity Assessment Using Dual-Echo uTE-MR Fingerprinting. *33rd Annual Meeting of ISMRM, Singapore 2024* ***(Oral Presentation)***
148. Carretero L, Fung M, Nunes B, Bhattacharjee R, Pedoia V, Majumdar S, Chaudhari A, Desai A, **Kogan F**, Rodriguez E, Lopez-Alcorocho JM, Sanchez E, Guillen P, Wiesinger F, Malpica N, Padron M. Longitudinal Assessment of Autologous Knee Chondrocyte Implantation Using DL T2 Mapping and DOSMA Framework. *33rd Annual Meeting of ISMRM, Singapore 2024* ***(Oral Presentation)***
149. Gatti AA, Blankemeier L, Van Veen D, Hargreaves B, Delp SL, **Kogan F**, Gold GE, Chaudhari AS. Neural Shape Models Meaningfully Localize Features Relevant to Osteoarthritis Disease: Data from the Osteoarthritis Initiative. *33rd Annual Meeting of ISMRM, Singapore 2024*
150. Goyal A, Pedersen R, Vainberg Y, Haddock B, Chaudhari A, **Kogan F**, Gatti A. Open-Source Automatic Whole and Subchondral Bone Segmentation using a Deep-Learning-Based Framework, DOSMA. *33rd Annual Meeting of ISMRM, Singapore 2024*
151. Mazzoli V, Vainberg Y, Hall M, Asay J, Delp S, **Kogan F**, Gold G. Imaging Biomarkers of Skeletal Muscle Strength Across the Lifespan. *33rd Annual Meeting of ISMRM, Singapore 2024*
152. Marusich K, Clouthier A, Ong C, Bartsch A, **Kogan F**, Gold GE, Chaudhari A, Gatti AA. Automated Pipeline for Creating Personalized Biomechanical Knee Models and Computing Personalized Cartilage Pressures During Gait. *33rd Annual Meeting of ISMRM, Singapore 2024*
153. Hales L, Gatti AA, Chaudhari A, **Kogan F**. Deep Learning Based De-Noising and Segmentation of Real-Time Kinematic Imaging of the Knee for Modeling Patellofemoral Bone Kinematics. *33rd Annual Meeting of ISMRM, Singapore 2024*
154. Goyal A, Barbieri M, Mazzoli V, **Kogan F**. Sensitivity and Repeatability of UTE-T2* Mapping to Tendon Extension and Contraction. *33rd Annual Meeting of ISMRM, Singapore 2024*

155. Vainberg Y, Gatti A, Pai A, **Kogan F**. In Vivo Reproducibility of T2 and T1rho Relaxation Times in Multiple Coils and Sequences. *33rd Annual Meeting of ISMRM, Singapore 2024*
156. Schmidt A, Rubin E, Little M, George M, Zheng H, Young K, Desai A, **Kogan F**, Majumdar S, Potter H, Gold G, Gatti AA. Association of Patella Bone Shape and MR-Diagnosed Patellar Tendinopathy with Patellar Cartialge T2/T1p in Elite Basketball Players. *33rd Annual Meeting of ISMRM, Singapore 2024*
157. Pai A, Andrews M, Gurchiek R, Pincheira P, Barbieri M, Rosenberg J, Liang T, **Kogan F**, Gold GE, Delp SL, Mazzoli V, Lichtwark GA, Chaudhari A. Diffusion Tensor MRI Analysis of Hamstring Muscle Architecture Following 9-Week Eccentric Training. *33rd Annual Meeting of ISMRM, Singapore 2024*
158. Barbieri M, Gatti AA, **Kogan F**. Improving Accuracy and Repeatability of Cartilage T2 Mapping in the OAI Dataset Through Extended Phase Graph Modeling. *33rd Annual Meeting of ISMRM, Singapore 2024* ***(Oral Presentation)***
159. Bruce OL, Barbieri M, **Kogan F**. Participant-informed finite element models of the tibia-fibula complex: sensitivity to material property definition. *33rd Annual Meeting of ISMRM, Singapore, 2024*
160. Ivanochko NK, Gatti AA, Noseworthy DM, **Kogan F**, Chaudhari AS, Maly MR. Exercise-induced changes in knee cartilage composition *in vivo*: comparing MRI sequences. Canadian Society of Biomechanics, Edminton, AB 2024
161. Goyal A, Vainberg Y, **Kogan F.** The Aging Knee: Changes in Bone Metabolic Activity Measured Using [18F]NaF PET-MR Imaging. ASBMR Annual Meeting, Toronto Canada 2024
162. Goyal A, Vainberg Y, Lee JH, Song YS, **Kogan F**. [18F]NaF PET-MRI Stress Test Detects Increased Metabolic Bone Response to Whole-Joint Loading Stress in Patients with Unilateral Knee Pain. Osteoarthritis Research Society International (OARSI). Seoul, S.Korea
163. Goyal A, Vainberg Y, Lee JH, Song YS, **Kogan F**. Systemic Patterns of Osteoarthritis: Feasibility of a Multi-joint Subchondral Bone and Clinical Assessment Study using [18F]NaF PET-MRI. Osteoarthritis Research Society International (OARSI). Seoul, S.Korea 2025
164. Barriobero V, Black MS, Young KA, Asay JL, Sherman SL, **Kogan F**, Gold GE, Hargreaves BA, Chaudhari AS, Gatti AA, Pai AS. Subregion-Specific T2-Cluster Analysis Reveals Early Cartilage Changes in Anterior Cruciate Ligament Reconstructed Knees. *34th Annual Meeting of ISMRM. Honolulu, HI 2025* **(Oral Presentation)**
165. Belibi F, Sahani V, Yael Vainberg Y, Goyal A, Williams A, Chu C, Pedersen R, Haddock B, Chaudhari AS, **Kogan F**, Gatti AA. Validation of an Automated Open Source Pipeline for Comprehensive Knee MRI Segmentation and Measurement of Quantitative Outcomes. *34th Annual Meeting of ISMRM. Honolulu, HI 2025*
166. Bruce O, Goyal A, Gatti AA, **Kogan F**. Spatial correspondence between [18F]NaF PET uptake and bone strain in the tibia. *34th Annual Meeting of ISMRM. Honolulu, HI 2025*
167. Goyal A, Vainberg Y, Shalit R, Asay J, Watkins LE, Gatti AA, Song YS, Haddock B, **Kogan F**. Aging Knee. *34th Annual Meeting of ISMRM. Honolulu, HI 2025* **(Oral Presentation)**
168. Belibi F, Vainberg Y, Gold GE, **Kogan F**, Goyal A. Exploratory Investigation on Bone-Muscle-Cartilage Relationships in Knee Osteoarthritis. *34th Annual Meeting of ISMRM. Honolulu, HI 2025*
169. Pai AS, Andrews MH, Gurchiek RD, Pincheira PA, Barbieri M, Friedrich T, **Kogan F**, Gold GE, Lichtwark GA, Mazzoli V, Delp SL, Chaudhari AS. Hamstring Muscle Architecture and Microstructure Changes Following 9-weeks of Nordic Hamstring Exercise Training. *34th Annual Meeting of ISMRM. Honolulu, HI 2025* **(Oral Presentation)**
170. Zheng H, Lee JH, **Kogan F**, Watkins LE. Differences in Hip Morphology and Cartilage Composition in Swimmers Experiencing High Rotational Forces. *34th Annual Meeting of ISMRM. Honolulu, HI 2025*
171. Gatti AA, Marusich KR, Clouthier A, Ong C, Chu C, Esrafilian A, Delp SL, Gold GE, **Kogan F**, Chaudhari AS. Orthopaedic Digital Twins: Linking Cartilage Pressure to Osteoarthritis Progression. *34th Annual Meeting of ISMRM. Honolulu, HI 2025*

172. George Mk, Barbieri M, Hales L, Pai A, Mazzoli V, **Kogan F**. The Effects of Deep Learning Imaging Denoising on Quantitative Diffusion Metrics of Lower Leg Muscles. *34th Annual Meeting of ISMRM. Honolulu, HI 2025*
173. Shalit R, Gatti AA, **Kogan F**, Barbieri M. Effect of Resolution and DL-Denoising on In Vivo Repeatability of qDESS T2 Relaxation Times. *34th Annual Meeting of ISMRM. Honolulu, HI 2025*
174. Kogan F, Stevens K, Williams A, Chu C. Feasibility of Non-Contrast MRI to Detect Changes in Synovitis after ACL Reconstruction Surgery. International Workshop on OA Imaging (IWOAI), Cambridge, UK 2025
175. Goyal A, Vainberg Y, Belibi, F., Gatti AA, White MS, Shalit R, Kogan F. Aging Knee. *International Workshop on OA Imaging (IWOAI), Cambridge, UK 2025* **(Oral Presentation – Best Abstract Award)**
176. Goyal A, Belibi F, Sahani V, Pedersen R, Vainberg Y, Williams A, Chu C, Haddock B, Gold G, Chaudhari A, **Kogan F**, Gatti A. Automating Imaging Biomarker Analysis for Knee Osteoarthritis Using an Open-Source MRI-Based Deep Learning Pipeline. *International Workshop on OA Imaging (IWOAI), Cambridge, UK 2025*
177. Bruce OL, Goyal A, Gatti AA, **Kogan F**. [18F]NaF uptake spatially corresponds with peak maximum principal strains in the tibia. 3*0th Congress of the International Society of Biomechanics*, *Stockholm, Sweden 2025* **(Oral Presentation)**
178. George, M. K., Barbieri, M., Liu, S., Bruce, O., Mazzoli, V., **Kogan, F**. (July, 2025). The Effects of Effort on Running-Induced Changes in DTI and T2 Mapping MRI Metrics in Lower Leg Muscles. 3*0th Congress of the International Society of Biomechanics*, Stockholm, Sweden. **(Oral Presentation)**
179. Shalit R, Bruce OL, Stevens KJ, Vainberg Y, McIntyre A, Kraus E, **Kogan F**. Quantitative measures of bone marrow edema to assess bone stress injury recovery. *Congress of the American Society of Biomechanics, Pittsburgh, USA 2025* (Poster)
180. George, M. K., Barbieri, M., Shalit, R., Pai, A., Mazzoli, V., Bruce, O., **Kogan, F**. (November, 2025). A Non-invasive Exploration of the Pathophysiology of Chronic Exertional Compartment Syndrome. MYO-MRI, Berlin, Germany. Goyal A, Belibi F, Vainberg Y, Shalit R, White M, Gatti AA, Kogan F. Quantitative PET-MR Imaging Of Bone Remodeling And Muscle Composition Across Age, Sex, And BMI. Annual Meeting of the Orthopaedic Research Society (ORS). Charlotte, NC 2026
181. Bruce O, Shalit R, Eichelman A, Kent K, Kraus E, **Kogan F**. Imaging of BSI microstructure changes during healing. Annual Meeting of the Orthopaedic Research Society (ORS). Charlotte, NC 2026 (ORS Stryker Award)
182. Pai AS, White M, Black M, Young K, Sherman S, Chu C, Williams A, Gold GE, **Kogan F**, Hargreaves B, Chaudhari A, Gatti AA. Early Peripheral Osteophyte Lipping Drives Early Femoral Bone Surface Growth Following Anterior Cruciate Ligament Reconstruction. Annual Meeting of the Orthopaedic Research Society (ORS). Charlotte, NC 2026
183. Holmes S, Wesselink E, Mackay S, **Kogan F**, Gold GE, Weber II KA, Kaptan M. Revealing Systemic Muscle Adaptations in Knee Osteoarthritis using Normative Modeling of the UK Biobank. *Osteoarthritis Research Society International (OARSI) Annual Meeting*. West Palm Beach, FL 2026
184. Watkins LE, Goyal A, Vainberg Y, Shalit R, Gold GE, **Kogan F**. Relationships between bony hip morphology, pain, and metabolic bone activity assessed with [18F]sodium fluoride positron emission tomography (PET)-MRI. *Osteoarthritis Research Society International (OARSI) Annual Meeting*. West Palm Beach, FL 2026
185. Goyal A, Belibi F, Watkins LE, Vainberg Y, Shalit R, White M, Gatti AA, **Kogan F**. Multi-tissue fat profiles in knee aging and osteoarthritis: composition, morphology, and texture across Hoffa's, marrow, muscle, and subcutaneous fat. *Osteoarthritis Research Society International (OARSI) Annual Meeting*. West Palm Beach, FL 2026
186. Goyal A, Vainberg Y, Shalit R, Gatti AA, Collins JE, **Kogan F**. Integrated [18F]NaF PET-MRI Reveals Metabolic and Microstructural Abnormalities in Subchondral Bone, Cartilage, and Meniscus in Knee Osteoarthritis. *Osteoarthritis Research Society International (OARSI) Annual Meeting*. West Palm Beach, FL 2026

187. Belibi F, Vainberg Y, White M, Gatti AA, Gold GE, **Kogan F**, Goyal A. Sex-Specific Alterations in Thigh Muscle Quality in Individuals with Knee Osteoarthritis. *Osteoarthritis Research Society International (OARSI) Annual Meeting*. West Palm Beach, FL 2026
188. White M, **Kogan F**, Delp SL, Gold GE, Chaudhari AS, Gatti AA. Varus Alignment and BMI Jointly Accelerate Medial Femoral Cartilage Thinning: Data from the Osteoarthritis Initiative. *Osteoarthritis Research Society International (OARSI) Annual Meeting*. West Palm Beach, FL 2026 **(Oral Presentation)**
189. Pai AS, White M, Black M, Young K, Sherman S, Chu C, Williams A, Gold GE, **Kogan F**, Hargreaves B, Chaudhari A, Gatti AA. Neural shape model-based score outperforms conventional measures in quantifying early and progressive joint remodeling in anterior cruciate ligament reconstructed knees. *Osteoarthritis Research Society International (OARSI) Annual Meeting*. West Palm Beach, FL 2026
190. Zhang Z, Jian X, Kim J, Lartey R, Kim K, Yeh PY, Li M, Obuchowski N, Winalski CS, Soher BJ, Kraus VB, Peng Q, Jones MH, Smith SE, **Kogan F**, Liu J, Link TM, Thedens DR, Anderson DD, Samaan MA, Hardy PA, Pietrosimone B, Chalian M, Qin Q, Beynnon BD, Zhang J, Fiorentino NM, Oei E, Giri S, Fung M, Zhao Y, Kim J, Li X, Repeatability and reproducibility of knee cartilage T1ρ and T2 mapping: A multi-site multi-vendor study by QMIC. *2026 Annual Conference of International Society of Magnetic Resonance in Medicine (ISMRM)*. Cape Town, South Africa 2026. **(Oral Presentation)**
191. Goyal A, Vainberg Y, Shalit R, **Kogan F**. The Impact of Age, Sex, BMI, and OA Status on Meniscus UTE-T2* Relaxation Times and Volumes. *2026 Annual Conference of International Society of Magnetic Resonance in Medicine (ISMRM)*. Cape Town, South Africa 2026. **(Oral Presentation)**
192. Kaptan M, Wang Y, Goyal A, Holmes S, Dennis D, Bédard S, Gold G, Chaudhari A, Pai S A, Ozkan K, Gatti A, Tharin S, **Kogan F**, Law CSW, Ratliff J, Hu S, Hargreaves B, Veeravagu A, Desai A, Delp S, McKay M, Decker H, Smith A, Pfyffer D, Fundaun J, Kim B, Berhe E, Walsh R, Schielke A, Alamin T, De Leener B, Cohen-Adad J, Smith Z, Muhammad F, Elliott J, Mackey S, WEsselink EO, Weber K. Condition-Specific Patterns of Muscle Health in Chronic Pain: A UK Biobank Normative Modeling Study. *2026 Annual Conference of International Society of Magnetic Resonance in Medicine (ISMRM)*. Cape Town, South Africa 2026.
193. Goyal A, Froeling M, Mazzoli V, **Kogan F**, Heskamp L, WEsselink EO, Kaptan M, Gold G, Delp S, McKay M, Elliott J, De Leener B, Cohen-Adad J, Law CSW, Nanz D, Weber K, editors. Standardized Multi-Vendor Acquisition Protocol for Whole-Body Quantitative Dixon MRI of Muscle. *2026 Annual Conference of International Society of Magnetic Resonance in Medicine (ISMRM)*. Cape Town, South Africa 2026.
194. Tran P, Sofko K, **Kogan F**, Bruce OL. Evaluating sensitivity of MRI-based porosity index to acute changes in cortical bone blood flow following exercise. *10th World Congress of Biomechanics*, July 2026, Vancouver, Canada.
195. Bruce OL, **Kogan F**. Feasibility of MRI for tibial strain estimation in physically active adults. *10th World Congress of Biomechanics*, July 2026, Vancouver, Canada. **(Oral Presentation)**
196. Gatti AA, White MS, Haralabidis N, Pai A, Chu C, Sherman S, Gold GE, Delp SL, **Kogan F**, Chaudhari AS. Simulated Medial Knee Contact Force is More Predictive of Cartilage Thinning Than Static Alignment: An Analysis of 3,301 OAI Subjects. *10th World Congress of Biomechanics*, July 2026, Vancouver, Canada. **(Extended Oral Presentation)**
197. Gatti AA, Marusich KR, Clouthier A, Ong C, White MS, Esrafilian A, Chu C, Sherman S, Gold GE, Delp SL, **Kogan F**, Chaudhari AS. Shape-Based Alterations in Cartilage Contact Mechanics Precede Radiographic Knee Osteoarthritis. *10th World Congress of Biomechanics*, July 2026, Vancouver, Canada.
198. Singh P, Pai A, Black M, Young KA, Sherman S, Chu C, Hargreaves B, Gold GE, **Kogan F**, Chaudhari AS, Burkhart T, Gatti AA. OpenSim JAM-based Subject-Specific Standardized Biomechanical Simulations of ACL Forces during a Standardized Test. 10th World Congress of Biomechanics, July 2026, Vancouver, Canada.
199. Pai AS, White MS, Gold GE, **Kogan F**, Gatti AA, Chaudhari AS. MOAKS-based Osteoarthritis Shape Score (MOSS) Enables Prediction of Clinical Outcomes. *10th World Congress of Biomechanics*, July 2026, Vancouver, Canada.

V – Grants

A. Current Research Support

R01AR083018 (PI: Feliks Kogan, Ph.D.) 04/01/24 - 03/31/29
NIH/NIAMS
Novel Non-Contrast MRI to Assess Synovitis in Osteoarthritis
This work aims to develop novel, non-contrast MRI methods to assess synovial inflammation in knee OA and to demonstrate their predictive power for OA whole joint disease progression and response to treatment.
Role: Principal Investigator

R01 AR079431 (PI: Feliks Kogan, PhD) 05/01/22 – 02/28/27
NIH/NIAMS
Imaging of Joint Response to Physiological Stress with Age, Sex and in Osteoarthritis
This project aims to develop a novel imaging "stress test" that is able to evaluate at a single time point, both the function of the whole-joint unit from physiological joint loading and multiple early markers of OA.
Role: Principal Investigator

R01 AR079431-02S1 (PI: Feliks Kogan, PhD) 09/07/23 – 02/28/27
NIH/NIAMS
Imaging of Joint Response to Physiological Stress with Age, Sex and in Osteoarthritis
Administrative supplement to investigate how PET imaging of mechanical overload relates to knee pain symptoms and as a target for conservative OA therapies
Role: Principal Investigator

R61EB036126 (MPI: Feliks Kogan, PhD & Garry Gold, MD) 08/01/24-07/31/27
NIH/NIBIB
Imaging of pain sources in myofascial pain syndrome
PET and MRI methods to identify novel imaging biomarkers of myofascial damage and the resultant inflammatory mediators that can diagnose and characterize MTrPs and the sources of pain in MPS.
Role: Co-Principal Investigator

Wu Tsai Human Performance Alliance Agility Grant (PI: Feliks Kogan, PhD) 2/01/2026-1/31/2028
Monitoring the trajectory of postpartum physical performance and pelvic floor recovery
Role: Principal Investigator

R01EB002524 (PI: Garry Gold, M.D. & Akshay Chaudhari, PhD) 07/01/24 – 06/30/29
NIH/NIBIB
Designing Novel MR Imaging Tools to Quantify Lower-Limb Exercise Adaptations in Knee Osteoarthritis
The goal of this proposal is to develop and validate a comprehensive examination of osteoarthritis and studying response to conservative OA treatments.
Role: Co-Investigator

Siemens MRI Development Grant (PI: Garry Gold, MD) 11/01/2025-10/31/2027
Quantitative MRI for focused muscle rehabilitation
Goals: To build and validate a highly accelerated, multi-parametric, bilateral, full lower-extremity MRI protocol with automated image analysis as well as a technique to estimate biomechanics using only smartphone videos
Role: Co-Investigator

B. Completed Research Support

R33 HL146775 (PI: Seda Tierney, M.D.) 03/01/20 – 02/28/26
NIH/NHLBI
Title: RE-ENERGIZE FONTAN – RandomizEd Exercise IntERvention Designed to MaximIZE Fitness in Pediatric FONTAN patients
Goals: A milestone-driven, randomized controlled trial in pediatric Fontan patients to test the hypothesis that a live-video-supervised exercise (aerobic + resistance) intervention will improve cardiac and physical capacity, muscle mass, strength and function, and endothelial function.

Role: Co-Investigator

R01 AR074492 (PI: Garry E. Gold) 07/01/19 – 06/30/25
NIH/NIAMS
Development of Sodium Fluoride PET-MRI for Quantitative Assessment of Knee Osteoarthritis
This project seeks to develop PET-MRI methods to sensitively track OA changes in response to biomechanical loading
Role: Co-investigator

R01AR077604 (PI: Brian Hargreaves, Ph.D.) 08/15/20 - 06/30/25
NIH/NIAMS
Rapid Low-Cost Quantitative 3D MRI and Gait Assessment of the Knee
This project develops and validates a 5-minute 3D quantitative knee MRI exam, combined with low-cost motion sensing and fully automated analysis to assess cartilage, tendon, ligament, bone and fibrocartilage health and asymmetries between knees.
Role: Co-Investigator

U01 EB023829 (PIs: X. Zhang & X. Li) 08/05/20 – 07/31/25
NIH/NIBIB
Enhanced MR for Morphological Characterization of Ligaments, Tendons, and Bone
Development of ultra-high field MRI methods for imaging of Ligaments, Tendons and Bone
Role: Subcontract PI

Sponsored Project (PI: Feliks Kogan, Ph.D.) 08/01/20 - 11/30/24
General Electric Healthcare
Musculoskeletal MRI Development
Development and clinical application of novel MRI methods for musculoskeletal imaging
Role: Principal Investigator

R21 EB030180 (NIBIB Trailblazer Award) **(PI: Feliks Kogan, PhD) 09/16/20 – 09/15/24**
NIH/NIBIB
Imaging of Metabolic Bone Response due to Localized Mechanical Loading
This project aims to develop a novel imaging method to acutely assess the in vivo metabolic *response* of bone to a mechanical load
Role: Principal Investigator

R00 EB022634 (PI: Feliks Kogan, Ph.D) 08/01/19 – 04/30/23
NIH/NIBIB
Quantitative Assessment of Early Metabolic and Biochemical Changes in Osteoarthritis
This project aims to Develop new, quantitative, and simultaneous PET-MR Imaging methods to evaluate metabolic and cellular changes in cartilage and bone as well as spatial relationships between the two tissues in early osteoarthritis
Role: Principal Investigator

Sponsored Project (PI: Feliks Kogan, Ph.D.) 2/01/21 - 1/31/23
General Electric Healthcare
PET-MRI Imaging of Musculoskeletal Pain
Development and clinical application of novel PET-MRI methods for musculoskeletal pain
Role: Co-Investigator/Principal Investigator (Took over as PI after departure of Sandip Biswal, M.D.)

Sponsored Project (PI: Feliks Kogan, Ph.D.) 08/01/20 - 11/30/24
General Electric Healthcare
Musculoskeletal MRI Development
Development and clinical application of novel MRI methods for musculoskeletal imaging
Role: Principal Investigator

Stanford-Philips Research Collaboration (PI: Akshay Chaudhari, Ph.D.) 09/01/20 - 08/31/22
Developing an Imaging and Biomechanics Framework for Low-Cost Precision Osteoarthritis Diagnostics

This work aims to develop a framework for rapid and low-cost precision osteoarthritis diagnostics using advanced magnetic resonance imaging, gait measurements, and machine learning.
Role: Co-Investigator

Sponsored Project (PI: Richard Reimer, M.D.) 09/01/18 – 08/31/21
Cystinosis Research Foundation
The effect of resistant exercise on muscle dysfunction in cystinosis
To addresses progressive muscular dysfunction in cystinosis by studying the effect of high intensity exercise with respect to overall muscle function and especially muscle mitochondrial function in the disease.
Role: Co-Investigator

K99 EB022634 (PI: Feliks Kogan, Ph.D) 09/01/17 – 06/30/19
NIH/NIBIB
Quantitative Assessment of Early Metabolic and Biochemical Changes in Osteoarthritis
This project aims to Develop new, quantitative, and simultaneous PET-MR Imaging methods to evaluate metabolic and cellular changes in cartilage and bone as well as spatial relationships between the two tissues in early osteoarthritis
Role: Principal Investigator

R01 AR0063643 (PI: Brian Hargreaves, Ph.D.) 09/09/13-06/30/19
NIH / NIAMS
Quantitative 3D Diffusion and Relaxometry of the Knee
This work aims to develop a novel magnetic resonance imaging approach that offers three-dimensional imaging of knee structure as well as multiple quantitative measures that can be used to assess joint health.
Role: Co-Investigator

Sponsored Project (PI: Garry Gold, M.D.) 09/01/17 - 08/31/20
General Electric Healthcare
Knee and Patellofemoral Overload and Articular Cartilage Injuries: Advanced Imaging Protocol Study
Acquire high-quality advanced longitudinal MRI data in basketball players and correlate the microstructural changes seen in cartilage, meniscus, subchondral bone, tendon, and other tissues with activity tracking.
Role: Co-Investigator

T32 CA074781 (PI: Felix Wehrli, Ph.D.) 03/2010-02/2012
NIH/NCI
Training in Quantitative Magnetic Resonance Imaging
Training in quantitative MRI methodology focusing on MR image acquisition, reconstruction and postprocessing tools for diagnosis and treatment monitoring
Role: Predoctoral Trainee

Howard Hughes Medical Institute (HHMI) Interfaces Fellowship 08/2007-07/2009
Title: Predoctoral Training in Clinical Imaging and Information Sciences
Goals: Immersive medical school coursework concomitant with advanced training in imaging to develop hypothesis-driven, clinically focused biomedical imaging research
Role: Graduate Fellow

VI – Clinical Trials

NCT03195270 11/24/2014- 01/20/2022
Title: Use of [18F]FDG PET/MRI in the Diagnosis of Pain Generators and/or Sites of Inflammation and to Monitor Treatment Effects in Patients With Chronic Pain
Type of Study: Phase 1 Interventional Study
Goal: Studying the ability of PET/MR imaging (using the PET tracer [^{18}F]FDG) to objectively identify and characterize pain generators in patients suffering from chronic pain.
Role: Lead-Investigator [Assumed Lead role in 2021]

VII – Patents

1. Reddy R, Hariharan H, Cai K, Haris M, Singh A, **Kogan F**. CEST MRI Methods for Imaging of Metabolites and The Use Of Same As Biomarkers. 2011. US Patent No. 8,686,727
2. Reddy R, **Kogan F**, Singh A, Cai K, Haris M, Hariharan H. *CEST MRI Methods For Imaging Of Neurotransmitters, Energy Metabolites, And Mapping And Characterization Of Chronic Liver Disease*. 2010. U.S. Serial No. 61/365,871
3. Cai K, Xu H, Reddy R, Li L, Haris M, Singh A, **Kogan F**, Nanga RP, Hariharan H. *Non-Invasive Imaging Of Tissue Redox State By Mri. 2013.* U.S. Serial No. 61/809,193
4. Haris M, Singh A, Cai K, Reddy R, **Kogan F**, Nanga RP, Hariharan H. *Magnetic Resonance Imaging of Poly-L-Glutamate.* 2015. U.S. Serial No. 14/781,441

VIII – Editorial Service

Editorial Board – Osteoarthritis Imaging (2021-present)

Guest Associate Editor - Medical Physics (2015)

Journal Reviewer (Primary) - Magnetic Resonance in Medicine (2015-present), Journal of Magnetic Resonance Imaging (2015-present), NMR in Biomedicine (2017-present), Osteoarthritis and Cartilage (2019-present), Bone (2019-Present), Osteoarthritis Imaging (2022-present)

Journal Reviewer (Other) – Journal of Orthopaedic Research, BMC Musculoskeletal Disorders, Neuroimage, PloS One, Journal of Translational Medicine, Magnetic Resonance Materials in Physics, Biology and Medicine (MAGMA), Cartilage, Acta Radiology, Frontiers in Endocrinology, Therapeutic Advances in Musculoskeletal Disease, Osteoarthritis and Cartilage Open, Nature Communications, NPJ Digital Medicine

Abstract Reviewer - International Society for Magnetic Resonance in Medicine Annual Meeting (2014-present)

IX – Service as a Grant Reviewer

1. Multiple Sclerosis Society – 2014
2. Dutch Arthritis Foundation – 2020-2023
3. NIH - Neurological, Aging and Musculoskeletal Epidemiology (NAME) Study Section – July 2021
4. Dutch Research Council (NWO) – October 2021
5. PRMRP (Department of Defense) Rheumatoid Arthritis Peer Review Panel – August 2022
6. New Frontiers in Research Fund (NFRF – Canadian Gov) – October 2022
7. NIH - NIAMS Resource-based Centers for Bone, Muscle, and Orthopaedic Research Study Section – November 2023
8. NIH - NIAMS Study Section for K(K01, K08, K23, K24, K99) and R03/R15 Applications – June 2024
9. NIH – Musculoskeletal Rehabilitation Sciences (MRS) Study Section (ad-hoc) – October 2024, June 2025
10. NIH – Musculoskeletal Rehabilitation Sciences (MRS) Study Section (Standing Member) – 2026 - 2030

X – University and Department Administrative Services

1. Stanford Human Biology Awards Committee (2020-2021, 2021-2022)
2. Thesis Committee Chair – Scott Uhlrich (Mechanical Engineering, 2020), Aliyeh Mousavi (Mechanical Engineering, 2020), Mary Hall (Mechanical Engineering, 2021), Delaney Miller (Mechanical Engineering, 2024), Jon Stingel (Mechanical Engineering, 2026)
3. Thesis Orals Committee - Lauren Watkins (BioEngineering, 2021); Hollis Crowder (Mechanical Engineering, 2021), Laurel Hales (Electrical Engineering, 2024), Ananya Goyal (BioEngineering, 2026), Anoosha Pai (BioEngineering, 2026)

4. Thesis Reading Committee – Lauren Watkins (BioEngineering, 2021), Laurel Hales (Electrical Engineering, 2024), Ananya Goyal (BioEngineering, 2026), Anoosha Pai (BioEngineering, 2026)
5. RSL Retreat Planning Committee – Faculty Lead (2020, 2025)
6. Radiology Diversity Committee (2020 – Present)
7. SEED (Science Education Enrichment for Diversity) Program Faculty Lead (2020-Present)
8. Biomedical Physics (BMP) Admissions Committee – (2023-Present)
9. Musculoskeletal Division Chief Search Committee (2023-2025)
10. Anesthesia Pain Imaging Faculty Search Committee (2023-2024)
    a. Assumed role of Search Committee Chair for final candidate in-person interviews, final committee rankings and report to the university
11. Pediatric Radiology MCL Faculty Search Committee (2025- Present)
12. Biomedical Physics (BMP) Executive Committee – (2025-Present)

XI – Service to Professional Organizations

Membership

1. International Society for Magnetic Resonance in Medicine (2009-present)
2. Society of Nuclear Medicine and Molecular Imaging (2016-present)
3. Osteoarthritis Research Society International (OARSI) (2018-present)
4. International Society of Osteoarthritis Imaging (ISOAI) (2020-Present)
5. Orthopaedic Research Society (2022 - Present)

Committee Service

1. Publications Committee, ISMRM (2015-2016).
2. Trainee Working Advisory Group, ISMRM (2015-2016).
3. Council of Early Investigators in Imaging ($CECI^2$) – Academy for Radiology & Biomedical Imaging Research (2018-present)
4. RSNA MSK Quantitative Imaging Biomarker Alliance (2018-present)
5. Organizing Committee – International Workshop on Osteoarthritis Imaging (IWOAI) – Rotterdam, Netherlands (2020)
6. ISMRM Annual Meeting Programming Committee (APMPC) (2023-2026)
7. Organizing Committee – ISMRM MSK Workshop – Boston, MA 2026 (2024-2026)

Leadership Roles

1. Musculoskeletal Study Group Executive Committee (Trainee Representative), ISMRM (2016-2017).
2. Lead Organizer – Member Initiated Symposium – "Translation of Quantitative MRI Methods for Clinical Impact in OA" – ISMRM (2020)
3. Co-Organizer – ORS Workshop - *Advancements in Metabolic and Compositional Imaging Technologies in Arthritis* – Long Beach, CA (2024)
4. ISMRM AMPC Musculoskeletal MRI Educational Program Committee Chair (2024-2025)
5. ISMRM AMPC Contrast Mechanisms Scientific Table Chair (2024-2025)
6. ISMRM AMPC Musculoskeletal Scientific Table Chair (2025-2026)

XI – Invited Presentations

Invited Lectures, Seminars, and Grand Rounds

1. PET-MRI Imaging of Early Cellular and Molecular Pathways in Osteoarthritis. *Interdisciplinary Musculoskeletal Research (IMSKR) Seminar*. University of Minnesota. April 2025
2. Emerging PET and MRI Methods to Add Clinical Value in Musculoskeletal Disorders. *Ortho Seminar – University of California - San Diego Department of Orthopedic Surgery*. January 2025
3. Imaging of Bone Metabolism with [18F]NaF PET. *Wu-Tsai Human Performance Alliance Seminar. Virtual*. April 2023
4. Imaging of Whole-Joint Structure, Microstructure and Function. *Peter Canham Lecture*. Western University. Ontario, Canada. October 2021 (Virtual)
5. Imaging of Joint Function and Response to Loading. *Vanderbilt Frontiers of Biomedical Imaging Science Series*. Nashville, TN. April 2021 (Virtual)
6. Functional Bone Imaging with [18F]NaF PET: New Applications with an Old Tracer. *UC Davis Frontiers in Biomedical Imaging.* Davis, CA. May 2020
7. Assessment of Whole-Joint Function with PET-MRI. *University of Wisconsin-Madison Radiology Seminar*. Madison, WI. September 2019
8. Skiing Forever: How advanced imaging can help us understand and prevent joint breakdown. *Grand Rounds - University of Utah Department of Orthopedic Surgery*. Salt Lake City, UT. September 2018
9. PET-MRI Multimodality Imaging of Bone-Cartilage Interactions in Early Osteoarthritis. *Hospital of the University of Pennsylvania, Radiology Department Seminar*. Philadelphia, PA. April 2017
10. Skiing Forever: How advanced imaging can help us understand and prevent joint breakdown. *McCaig Institute Seminar, University of Calgary Cummings School of Medicine*. Calgary, Ca. December 2016
11. High Resolution Volumetric Imaging of Endogenous Metabolites with Chemical Exchange Saturation Transfer (CEST) Imaging. *Translational and Molecular Imaging Institute Seminar Series, Mount Sinai School of Medicine.* New York, NY. August 2016
12. Combined PET-MRI Imaging of Osteoarthritis. *Erasmus MC Department of Radiology Seminar Series*. Rotterdam, Netherlands. April 2015
13. Amine Chemical Exchange Saturation Transfer Imaging. *NYU Imaging Seminar*. New York. June 2013.
14. Endogenous Amine Proton Exchange Based MRI and Their Applications. *Vanderbilt University Institute of Imaging Sciences Founders Lectures*. Nashville, Tn. March 2013.

Invited Presentations at National and Regional Meetings

15. Emerging PET and MRI Methods to Add Clinical Value in Musculoskeletal Disorders. *Vail Scientific Summit 2022*. Vail, CO. August 2022
16. Multimodality Quantitative Imaging of Early Osteoarthritis. *Imaging Elevated: Utah Symposium of Emerging Investigators*. Salt Lake City, UT. September 2017
17. PETMR Imaging of metabolic bone activity in knee osteoarthritis. *GE PET-MRI Users Meeting*. Denver, CO 2017
18. CEST: Description of Technique and Emerging Biomedical Applications. *Annual CMROI Workshop on Imaging Biomarkers*. Philadelphia, PA. March 2014

Invited Presentations at International Meetings

19. Nuances in Numbers: Matching Methods to Data and Questions in OA Research. *2026 OARSI Early-Career Investigators Workshop*. West Palm Beach, FL April 2026

20. Comprehensive Multi-tissue Imaging of Early Disease Mechanisms in Osteoarthritis. 2025 International Workshop on Osteoarthritis Imaging. Cambridge, UK July 2025
21. Quantitative Musculoskeletal MRI. *ISMRM-Endorsed Global Outreach Workshop in Thailand*. Bangkok, Thailand May 2024.
22. Combining Function and Structure with PET/MRI Imaging in OA. *Orthopedic Research Society (ORS) Annual Meeting.* Long Beach, CA February 2024
23. MSK Applications. *ISMRM-SNMMI Co-Provided Workshop on PET/MRI*. Los Angeles, CA October 2023
24. PET-MRI in Musculoskeletal Disease: Applications Now and Future Potential. *Gordon Research Conference*. Andover, NH July 2022
25. MSK PET-MRI in OA: From Clinical to Research Applications. *OARSI Imaging Discussion Group Meeting*. Virtual June 2022
26. MSK MRI Protocols. *2022 Annual Meeting of the ISMRM*. London, United Kingdom May 2022
27. Hybrid MR Techniques. *2021 Annual Meeting of the ISMRM*. Vancouver, Canada May 2021
28. Is There a Role for Nuclear Imaging? *International Cartilage Regeneration and Joint Preservation Society 2019 World Congress.* Vancouver Canada. October 2019
29. New Contrast Mechanisms for MSK. *ISMRM Workshop on Ultra High Field Magnetic Resonance: Technological Advances, Translational Research Promises, and Clinical Applications*. Dubrovnik, Croatia. March 2019
30. Advanced Imaging of Whole-Joint Disease in Early Osteoarthritis. *Chinese Society of Radiology Annual Meeting*. Beijing, China. November 2018
31. Hybrid MR Imaging in MSK. *25th Annual Meeting of ISMRM – Educational Session*. Paris, Fr. June 2018
32. Advancing Volumetric GagCEST: Imaging strategies, Analysis, and Standardization of Methods. *5th Annual Workshop on CEST Imaging*. Philadelphia, PA. October 2015
33. Evaluation of Bone Metabolism & Remodeling with PET/MR. *23rd Annual Meeting of ISMRM – Educational Session*. Singapore. May 2016
34. Advanced Quantitative Cartilage Imaging Techniques. *23rd Annual Meeting of ISMRM – Combined Educational & Scientific Session*. Toronto, Canada. June 2015

Scientific Sessions Chaired

1. MRI of Cartilage: 31st Annual Meeting of ISMRM*, London, United Kingdon 2022*
2. *Clinical Research 1:* 2019 IWOAI*,* Prince Edward Island, Canada. June 2019
3. *Machine Learning and Post-Processing in MSK:* 27th Annual Meeting of ISMRM, Montreal, Canada May 2019.
4. *CEST From Equations to Cells to Humans*: 25th Annual Meeting of ISMRM*,* Honolulu, HI April 2017
5. *Applications of Body Imaging*: ISMRM-SNMMI Co-Provided Workshop on PET/MRI, Chicago, IL October 2017
6. *MSK: The Most Powerful Hour*: 24rh Annual Meeting of ISMRM, Singapore, Singapore May 2016
7. *All About Bones:* 24rh Annual Meeting of ISMRM, Singapore, Singapore May 2016

XIII – Teaching and Mentorship

A. Trainee Advising

PhD Students:

1. Katie Sofko, BMP 2025-Current (Primary)

2. Madison George, BioE. 2024-Current (Primary)
3. Anoosha Pai, BioE. 2021-Current (Co-Advisor)
4. Ananya Goyal, BioE. 2020-Current (Primary)
5. Laurel Hales, EE. 2019-2025 (Primary)
6. Scott Uhlrich, MechE. 2016-2020 (Co-Advisor) [Assistant Professor – University of Utah]
7. Lauren Watkins, BioE. 2019-2021. (Primary) [Research Engineer– Stanford University]

Post-Doctoral Trainees/Instructors:

1. McKenzie White, PhD. 2025-Current (Co-Advisor)
2. Songyun Liu, PhD. 2024-Current (Primary)
3. Olivia Bruce, PhD. 2023-Current (Primary)
4. Anthony Gatti, PhD. 2022-Current (Co-Advisor)
5. Lauren Watkins, PhD. 2023-2025(Primary) [Research Engineer - Stanford University]
6. Marco Barbieri, PhD. 2020-2025 (Primary) [Principal Investigator – University of Basel]
7. Valentina Mazzoli, PhD. 2019-2023 (Co-Advisor) [Assistant Professor – New York University]
8. Ryan Alcantara, PhD. 2020-2021 (Co-Advisor) [Research Scientist – Apple Inc.]
9. Akshay Chaudhari, PhD. 2019-2020 (Co-Advisor) [Associate Professor – Stanford University]

Medical Students

1. Saachi Datta, 2025-2026 [MedScholars Fellow]

Research Rotations

1. Reese Dunne, Spring 2024 [MechE Candidate]

Stanford Honors-Thesis Students:

1. Hayden Zhang, B.S. 2022-2025 (Primary) [Research Assistant – Twin Cities Orthopedics]
2. Joanna Langner, B.S. 2018-2020 (Co-Advisor) [Urology Resident - Stanford University] (Co-Advisor)
3. Jacob Thoenen, B.S. 2019-2020 (Primary) [Emergency Medicine Resident – University of South Florida]
4. Sloane Brazina, B.S. 2014-2015 (Co-Advisor) [OBGYN Resident – UCSF]

Gap Year Students:

1. Rachel Shalit, B.S. 2024-Current (Primary)
2. Yael Vainberg, B.S. 2022-2024 (Primary) [Med School – Touro University]
3. Andrew Schmidt, M.S. 2019-2022 (Co-Advisor) [Med School – Kaiser Permanente Bernard Tyson SOM]
4. Jacob Thoenen, B.S. 2020-2021 (Primary) [Emergency Medicine Resident – University of South Florida]

Undergraduate Students (Primary):

1. Patricia Tran – [RSL REU – Summer 2025 - Current]
2. Erika Noel – [SURF Fellow – Summer 2024]
3. Aditya K Subramania – [RSL REU – Summer 2022]
4. Janelle Baker [Bioengineering REU – Summer 2021]
5. Francesca Belibi – [Human Biology Research Experience – Summer 2021]

B. Teaching and Courses – Primary Instructor

1. BMP 211: Biomedical Signals I. Stanford University, Fall 2022 [*One of Two Primary Instructors*]
2. BMP 210a: Seminar Series for Biomedical Physics. Stanford University, Fall 2022, Fall 2023, Fall 2024, Fall 2025 [*Lead Instructor (out of two primary instructors)*]
3. BMP 210b: Seminar Series for Biomedical Physics. Stanford University, *Spring 2023, Spring 2025* [*Lead Instructor (out of two primary instructors)*]

C. Teaching and Courses – Lecturer and Teaching Assistant

1. Lecturer – BMP255: Medical Imaging Ethics. Stanford University. Winter 2026 [Taught 1 Lecture]
2. Instructor - EE369A: Medical Imaging Systems I. Stanford University. Winter 2023, Spring 2025, Spring 2026 [Taught 2 lectures, Created 1 HW assignment and helped design final exam]
3. Instructor – BioE 301C: *Diagnostic Devices Lab*. Stanford University, Spring 2016, Spring 2021, Spring 2022, *Spring 2023, Spring 2024, Spring 2025, Spring 2026* [Taught 1 lecture and 2 laboratory sessions. Also created 1 Homework Assignment]
4. Lecturer – BioE 224: Probes and Applications of Multi-Modality Molecular Imaging of Living Subjects. Stanford University. Winter 2023 [Taught 1 Lecture]
5. Lecturer – BioE 326B: *In Vivo MR: Relaxation Theory and Contrast Mechanisms*. Stanford University, Spring 2016, Spring 2021, Spring 2022, Spring 2023, Spring 2025, Winter 2026 [Taught 1-2 lectures per Course]
6. Lecturer – BioE 390: *Introduction to Bioengineering Research.* Stanford University, Fall 2014, Fall 2016, Fall 2019. [Taught 1 lecture/Course]
7. Lecturer – BioE 389: *Orthopedic Bioengineering*. Stanford University, Fall 2018. [Taught 1 lecture]
8. Lecturer – BioE 393: *Bioengineering Research Colloquium*. Stanford University, Spring 2018. [Taught 1 lecture]
9. Teaching Assistant – BMB 601: *Fundamentals of Magnetic Resonance.* University of Pennsylvania, Spring 2010, Spring 2012, Spring 2013