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International Society for Magnetic Resonance in Medicine • www.ISMRM.org

ISMRM Workshop Series 2015

Imaging Based Measures of Osteoarthritis (8th International Workshop on Osteoarthritis)

11–14 September 2015 • Asilomar Conference Grounds • Pacific Grove, CA, USA

Organizing Committee

Co-Chair: Garry E. Gold, M.D., Stanford University, Stanford, CA, USA

Co-Chair: Michael C. Nevitt, Ph.D., University of California, San Francisco, CA, USA

Brian Hargreaves, Ph.D., Stanford University, Stanford, CA, USA

Graeme Jones, M.D., University of Tasmania, Australia

Xiaojuan Li, Ph.D., University of California, San Francisco, CA, USA

Tuhina Neogi, M.D., Ph.D., FRCPC, Boston University School of Medicine, Boston, MA, USA

Miika T. Nieminen, Ph.D., Oulu University Hospital, Oulu, Finland

Edwin H. G. Oei, M.D., Ph.D., Erasmus MC, University Medical Center, Rotterdam, The Netherlands



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ISMRM Workshop on Imaging Based Measures of Osteoarthritis (8th International Workshop on Osteoarthritis)

OVERVIEW

This workshop explores the rapidly developing MRI and other imaging modalities for assessment of osteoarthritis (OA). The main emphasis will be on the technological development of new applications of MRI in osteoarthritis and their potential applications in clinical research, clinical trials and eventually in treatment of OA, including application of rapid imaging for morphology, biochemical imaging, and ultra-short echo time imaging. The talks will focus on recent advances in designs of pulse sequence, coil designs, and applications to enhance our understanding of the OA disease process. The workshop will greatly emphasize inclusiveness of international speakers and attendees.

TARGET AUDIENCE

The workshop is designed for scientists and clinicians including: physicists, engineers, computer scientists, radiologists, rheumatologists and orthopedic surgeons, students working on pulse sequences, RF coil design, image reconstruction, musculoskeletal and body imaging, MRI technologists, clinical investigators, and anyone pursuing imaging of OA.

EDUCATIONAL OBJECTIVES

Upon completion of this activity, participants will be able to:

- Describe the state-of-the art in MR imaging of OA;
- List currently available, established or emerging MRI techniques;
- Discuss the challenges and opportunities for measurements of OA in all joint tissues, including bone, cartilage, synovium, menisci, and ligaments;
- Review the use of MR imaging for clinical research and clinical applications in OA; and
- Explore the research needs for moving the field forward on MRI Biomarker Qualification and regulatory acceptance.

SPEAKER UPLOAD INFORMATION

(Audiovisual Preview) Please see program for additional times (breaks & lunch).

The audio-visual staff will be located on the right of the meeting room. Uploading presentations is available (First-come, first-served basis):

- Friday, 11 September 2015 from 15:00–18:00
- Saturday, 12 September 2015 from 07:00–08:30
- Sunday–Monday, 13–14 September 2015 from 07:00–08:45

PROGRAM CREDIT DESIGNATION

The International Society for Magnetic Resonance in Medicine designates this live activity for a maximum of 13.25 *AMA PRA Category 1 Credits™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

TO RECEIVE CME CREDIT

You will need to complete the online workshop evaluation form in order to receive credit.

Please go to www.ismrmed.org/ismrmeducation/ for access to the evaluation site.

The number on your badge is your username and the password is your last name (case sensitive). Once you have finalized the evaluation, you will have access to your certificate of credit.

If you registered on site, or after the pre-registration deadline, you will have access to the online evaluation and credit certificates two weeks after the workshop.

ISMRM Workshop on Imaging Based Measures of Osteoarthritis (8th International Workshop on Osteoarthritis)

DECLARATION OF FINANCIAL RELATIONSHIPS

The ISMRM is committed to:

- Ensuring balance, independence, objectivity and scientific rigor in all Continuing Medical Education (CME) programs; and
- Presenting CME activities that promote improvements or quality in healthcare and are independent of commercial interests.

Therefore, it is the policy of the Society that any person who has influence over the content of a program designated for *AMA PRA Category 1 Credits™* must disclose any real or apparent financial interest or relationship (i.e., grants, research support, consultant, honoraria) that they or their spouse/partner have had in the last 12 months with “any entity producing, marketing, re-selling, or distributing health care goods or services consumed by, or used on, patients.”

The ISMRM does not imply that such relationships are inherently improper or that such interests would prevent the speaker or organizer from making an objective contribution. However, it is imperative that these relationships are identified in order to manage or resolve potential conflicts of interest before the program, and participants at the CME activity may have these facts fully disclosed in advance. It then remains for the audience to determine whether an individual's outside interests may reflect a possible bias in either the exposition or conclusions presented.

Following are the names of all presenters, committee members and organizers who had influence upon program content. If individuals have disclosed real or apparent financial interests or relationships, the interests or relationships are described.

Invited Faculty

Neal K. Bangert, Ph.D.
Garry E. Gold, M.D.

Ali Guerrazi, M.D., Ph.D.

Ida K. Haugen, M.D., Ph.D.
Graeme Jones, M.D.
C. Benjamin Ma, M.D.

Emily McWalter, Ph.D.
Michael C. Nevitt, Ph.D.

Miika T. Nieminen, Ph.D.
Edwin H. G. Oei, M.D., Ph.D.
Richard Souza, Ph.D., P.T.
David R. Wilson, D.Phil.

No Relationships to Disclose
Grant: General Electric;
Consulting Fee: Boston Scientific
Employment: Boston Imaging Core Lab, LLC; Consulting Fee: MerckSerono, Genzyme, TissueGene, OrthoTrophix
No Relationships to Disclose
No Relationships to Disclose
Grant: Zimmer, Histogenics;
Consulting Fee: Zimmer
Grant: General Electric
Consulting Fee: Flexion Therapeutics
No Relationships to Disclose
Grant: General Electric
No Relationships to Disclose
Grant: DePuy

Workshop Organizers & Staff

Michael C. Nevitt, Ph.D.

Garry E. Gold, M.D.

Brian A. Hargreaves, Ph.D.
Graeme Jones, M.D.
Xiaojuan Li, Ph.D.
Tuhina Neogi, M.D., Ph.D., FRCPC
Miika T. Nieminen, Ph.D.
Edwin H. G. Oei, M.D., Ph.D.
Melissa Simcox (ISMRM Staff)
Candace Spradley (ISMRM Staff)

Consulting Fee: Flexion Therapeutics
Grant: General Electric;
Consulting Fee: Boston Scientific
Grant: General Electric
No Relationships to Disclose
Please see Addendum
No Relationships to Disclose
No Relationships to Disclose
Grant: General Electric
No Relationships to Disclose
No Relationships to Disclose

Workshop Moderators

Erik B. Dam, Ph.D.

Martin Englund, M.D., Ph.D.
Brian A. Hargreaves, Ph.D.
David J. Hunter, Ph.D.
Graeme Jones, M.D.
C. Kent Kwok, M.D.
Nancy E. Lane, M.D.
Xiaojuan Li, Ph.D.
Thomas M. Link, M.D., Ph.D.
John A. Lynch, Ph.D.
Edwin H. G. Oei, M.D., Ph.D.
Wolfgang Wirth, Ph.D.

Employment: Biomediq;
Ownership Interest: Biomediq
No Relationships to Disclose
Grant: General Electric
No Relationships to Disclose
No Relationships to Disclose
Grant: Abbvie, EMD Serono
Please see Addendum
Please see Addendum
Please see Addendum
No Relationships to Disclose
Grant: General Electric
Employment: Chondrometrics GmbH; Ownership Interest: Chondrometrics GmbH

ISMRM Workshop on Imaging Based Measures of Osteoarthritis (8th International Workshop on Osteoarthritis)

Day 1 – Friday, 11 September 2015 (no CME available)		
11:00	MRI Practicum at Stanford Department of Radiology	
15:00	Registration until 18:00	
18:00	Dinner served until 19:00	
Day 2 – Saturday, 12 September 2015 (4.25 CME available)		
07:00	Registration & Speaker Upload Available	
07:30	Breakfast served until 09:00	
08:30	Introduction & Overview	Michael C. Nevitt, Ph.D. University of California San Francisco, CA, USA
Session 1: New Frontiers in Imaging of Osteoarthritis – Part 1 Moderators: Brian A. Hargreaves, Ph.D. & Wolfgang Wirth, Ph.D.		
09:00	Assessment of Synovial Tissue & Inflammation: Acquisition & Scoring	Ali Guermazi, M.D., Ph.D. Boston University School of Medicine Boston, MA, USA
Proffered Papers – Oral Session		
09:30	Detecting Synovitis without Intravenous Contrast Using a Modified DESS MRI Sequence	Emily McWalter, Ph.D. Stanford University Stanford, CA, USA
09:42	MRI Findings Associated with Development of Incident Knee Pain Over 48-Months – Data from the Osteoarthritis Initiative	Gabby Joseph, Ph.D. University of California San Francisco, CA, USA
09:54	Characterization of [18F]-FDG Uptake in Osteoarthritis of the Hip: Comparison Between PET-MRI & PET-CT	Audrey Fan, Ph.D. Stanford University Stanford, CA, USA
10:06	Break & Speaker Upload Available	
10:30	Advanced MRI Techniques for Assessment of Joint Inflammation	Emily McWalter, Ph.D. Stanford University Stanford, CA, USA

Day 2: Saturday, 12 September 2015 continued on next page



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Day 2: Saturday, 12 September 2015 continued from previous page

Proffered Papers – Oral Session (continued)		
11:00	Comparison Between Semi-Quantitative & Quantitative Methods for the Assessment of Synovitis in Knee Osteoarthritis Using Non-Enhanced & Contrast-Enhanced MRI	Michel D. Crema, M.D. Presented by Ali Guermazi, M.D., Ph.D. Boston University School of Medicine Boston, MA, USA
11:12	Knee Pain & its Association with Synovitis Assessed on Static & Dynamic Contrast-Enhanced MRI in Obese Persons with Knee Osteoarthritis: a Cross-Sectional Study	Robert Gabriel Coumine Riis, M.D. The Parker Institute Copenhagen, Denmark
11:24	Quantitative Estimation of ADC Using DESS	Bragi Sveinsson, M.Sc. Stanford University Stanford, CA, USA
11:36	T1 Measurements of Bone Marrow Lesions in Osteoarthritis.	Richard Hodgson, Ph.D. University of Manchester Manchester, England, UK
11:48	Lunch served until 13:00 & Speaker Upload Available	
Session 2: MR New Frontiers In Imaging Of Osteoarthritis – Part 2 Moderators: Graeme Jones, M.D. & Thomas M. Link, M.D., Ph.D.		
13:15	Novel Techniques to Evaluate Joint Tissue Composition in Osteoarthritis Imaging	Miika T. Nieminen, Ph.D. Oulu University Hospital Oulu, Finland
13:45	Application of Compositional Imaging in Large Clinical & Population Studies of Osteoarthritis	Edwin H. G. Oei, M.D., Ph.D. Erasmus MC – University Medical Center Rotterdam, The Netherlands

Day 2: Saturday, 12 September 2015 continued on next page

SAVE THE DATES!

FUTURE ISMRM WORKSHOPS

09–11 October 2015 • La Jolla, CA, USA

ISMRM Workshop on MRI Cell Tracking for Visualizing Cellular Therapeutics & Inflammation

17–20 January 2016 • Sedona, AZ, USA

ISMRM Workshop on Data Sampling & Image Reconstruction

06–09 March 2016 • Heidelberg, Germany

ISMRM Workshop on Ultra High Field MRI: Technological Advances & Clinical Applications

06–08 June 2016 • Amsterdam, The Netherlands

ISMRM Workshop on Molecular & Cellular MRI: Advances in Diagnosis, Therapy & Clinical Translation

ISMRM Workshop on Imaging Based Measures of Osteoarthritis (8th International Workshop on Osteoarthritis)

Day 2: Saturday, 12 September 2015 continued from previous page

Proffered Papers – Oral Session		
14:15	Validation & Optimization of Adiabatic T1P & T2P for Quantitative Measurements of Articular Cartilage at 3T	Victor Casula, M.Sc. Presented by Eveliina Lammentausta, Ph.D. University of Oulu Oulu, Finland
14:27	Imaging Knee Osteoarthritis with Multiple Contrasts using Ultrashort Echo-Time Double-Echo Steady-State MRI	Akshay S. Chaudhari, M.Sc. Stanford University Stanford, CA, USA
14:39	Influence of Exercise & Waiting Time Required for dGEMRIC on T2 Relaxation Times of Knee Cartilage at 3T	Joost Verscheuren, M.D. Erasmus University Medical Center Rotterdam, The Netherlands
14:51	Comparison of Pharmacokinetic Parameters, dGEMRIC & MOAKS in Knee Osteoarthritis	Stine Hangaard, M.D., Ph.D. The Parker Institute Copenhagen, Denmark
15:03	Transverse Relaxation Time (T2) of Cartilage in Knees with Early Radiographic OA Versus Non-Arthritic Knees with Risk of OA Versus Healthy Reference Knees- Cross Sectional & Longitudinal Analysis from the Osteoarthritis Initiative (OAI)	Wolfgang Wirth, Ph.D. Paracelsus Medical University Salzburg, Austria
15:16	Cartilage Signal Abnormalities in the Knee are Precursors of More Severe Cartilage Damage – Data from the Osteoarthritis Initiative	Benedikt Schwaiger, M.D. University of California San Francisco, CA, USA
15:28	Reception & Poster Session in Rooms Troyon & Acacia (no CME available)	
18:00	Dinner served until 19:00	

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SMRT 25th Annual Meeting • 07–08 May

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ISMRM ABSTRACT DEADLINE: 11 NOVEMBER 2015

SMRT ABSTRACT DEADLINE: 10 DECEMBER 2015



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(8th International Workshop on Osteoarthritis)

Day 3 - Sunday, 13 September 2015 (5.5 CME available)		
07:00	Registration & Speaker Upload Available	
07:30	Breakfast served until 09:00	
Session 3: Imaging in Post-Injury Osteoarthritis Moderators: C. Kent Kwoh, M.D. & Xiaojuan Li, Ph.D.		
08:45	What Information Do We Need from Post-Injury Imaging for the Clinic & Research?	Benjamin Ma, M.D. University of California San Francisco, CA, USA
Proffered Papers – Oral Session		
09:15	MRI Findings Predict Subjective Clinical Outcome Two Years After Anterior Cruciate Ligament Rupture	Belle van Meer, M.D., Ph.D. Erasmus MC University Medical Center Rotterdam, The Netherlands
09:27	Change in Meniscal Body Extrusion after Arthroscopic Partial Meniscectomy vs. Non-Surgical Management in Patients with Knee Osteoarthritis: Results from the MeTeOR Trial	Martin Englund, M.D., Ph.D. Lund University Lund, Sweden
09:39	Arthroscopic Disease State & qMRI T2 & UTE-T2* Mapping in Humans with Degenerative Meniscus Tears	Constance Chu, M.D. Stanford University Stanford, CA, USA
09:51	Break/Poster Viewing in Rooms Troyon & Acacia, & Speaker Upload Available	
10:30	Detecting Early Post-Injury Joint Damage with MRI in the ACL Population	Garry E. Gold, M.D. Stanford University Stanford, CA, USA
Proffered Papers – Oral Session		
11:00	Longitudinal Evaluation of T2 & T1rho Relaxation Times Using Projection Maps & Cluster Analysis in the Femoral Condyles of Healthy & ACL-Injured Populations	Uchechukwuka D. Monu, M.Sc. Stanford University Stanford, CA, USA
11:12	Longitudinal Analysis of the Bone Shape Changes 6 Month & 1 Year After Anterior Cruciate Ligament Injury & Reconstruction	Valentina Padoia, Ph.D. University of California San Francisco, CA, USA
11:24	Reliability of Fractal Signature Analysis: Multi-Dimensional Assessment	Frank Roemer, M.D. Presented by Ali Guermazi, M.D., Ph.D. University of Erlangen-Nuremberg Erlangen, Germany
11:36	Kinematics After ACL Reconstruction Influence Activity Level & Cartilage Matrix Changes at 1 Year Follow-Up	Keiko Amano, M.D. University of California San Francisco, CA, USA
11:48	PET-MR Imaging of Osseous & Inflammatory Metabolic Activity Post Knee Injury	Feliks Kogan, Ph.D. Stanford University Stanford, CA, USA
12:00	Lunch served until 13:00 & Speaker Upload Available	

ISMRM Workshop on Imaging Based Measures of Osteoarthritis (8th International Workshop on Osteoarthritis)

Day 3: Sunday 13 September 2015 continued from previous page

Session 4: Joint Biomechanics in Osteoarthritis: The Role of Imaging Moderators: Martin Englund, M.D., Ph.D. & John A. Lynch, Ph.D.		
13:15	Assessing Knee Joint Biomechanics with MRI	Richard Souza, Ph.D., P.T. University of California San Francisco, CA, USA
13:45	Role of Imaging in Assessing Biomechanics in Hip Osteoarthritis	David R. Wilson, D.Phil. University of British Columbia Vancouver, BC, Canada
Proffered Papers – Oral Session		
14:15	<i>In Vivo</i> Articular Cartilage Intratissue Deformation in the Human Knee	Deva Chan, Ph.D. Presented by Corey Neu, Ph.D. Purdue University West Lafayette, IN, USA
14:27	<i>In Vivo</i> Time-Dependent 3D Morphology of Loaded Articular Cartilage of the Tibiofemoral Joint: a Proof-of-Concept Study	Jang-Hwan Choi, Ph.D. Stanford University Stanford, CA, USA
14:39	Contrast-Enhanced Computed Tomography(CECT) Reflects Stiffness of Intact Articular Cartilage	Reza Nickmanesh, M.Sc. University of British Columbia Vancouver, BC, Canada
14:51	Tibial Epiphyseal Bone Mineral Density is Related to Pain in Patients with Osteoarthritis	Wadena Burnett, M.Sc. University of Saskatchewan Sakatoon, SK, Canada
15:03	Open-MRI Measures of Cam Intrusion for Hips in an Anterior Impingement Position Relate to Acetabular Contact Force	Lawrence Buchan, M.A.Sc. Presented by David R. Wilson, D.Phil University of British Columbia Vancouver, BC, Canada
15:15	Break & Speaker Upload Available	
Session 5: Recent Insights from Joint Imaging in Population & Clinical Studies Moderators: David J. Hunter, Ph.D. & Nancy E. Lane, M.D.		
15:35	Imaging the Hand in Osteoarthritis	Ida K. Haugen, M.D., Ph.D. Diakonhjemmet Hospital Oslo, Norway
16:05	Recent Key Finding from Cohort Studies Using Knee MRI	Graeme Jones, M.D. University of Tasmania Tasmania, Australia

Day 3: Sunday 13 September 2015 continued on next page



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Proffered Papers – Oral Session		
16:35	Automated Selection of Trabecular Bone Texture Regions on Hand Radiographs	Marcin Wolski, Ph.D. Curtin University Perth, Australia
16:47	Prevalent Focal Cartilage Defects are Risk Factors for Progression in the Same Subregion & Increase Risk of Incident Cartilage Damage in the Same Compartment: the Multicenter Osteoarthritis Study	Ali Guermazi, M.D., Ph.D. Boston University School of Medicine Boston, MA, USA
16:59	The Predictive Value of Quantitative Joint Space Width Loss for Total Hip Replacement	Felix Liu, M.A. Bioimaging University of California San Francisco, CA, USA
17:11	Amount of Weight Loss Impacts Hyaline Cartilage T2 Relaxation Time in Obese & Overweight Individuals: 48 Months Data from the Osteoarthritis Initiative	Alexandra Gersing, M.D. University of California San Francisco, CA, USA
17:23	The Within-Person Association Between Osteoarthritis Features on MRI & Knee Pain	Jos Runhaar, Ph.D. Erasmus MC University Medical Center Rotterdam, The Netherlands
17:35	Incident Frequent Knee Pain is Associated with Changes in Semi-Quantitative Imaging Biomarkers of Inflammation	C. Kent Kwok, M.D. University of Arizona Tucson, AZ, USA
17:47	Adjourn	
18:00	Dinner	
19:00	Dessert Reception at Monterey Bay Aquarium (Departure from Asilomar Conference Grounds at 19:00)	

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ISMRM Workshop on Imaging Based Measures of Osteoarthritis

(8th International Workshop on Osteoarthritis)

Day 4 - Monday, 14 September 2015 (2.5 CME available)

07:00	Registration & Speaker Upload Available	
07:30	Breakfast served until 09:00	
Session 6: Quantitative Data from Joint Images: Are We There Yet (and Why We Need to Get There)? Moderators: Erik B. Dam, Ph.D. & Edwin H. G. Oei, M.D., Ph.D.		
08:45	Challenges Associated with Automated Quantitation of Joint Data	Neal K. Bangerter, Ph.D. Brigham Young University Provo, UT, USA
Proffered Papers - Oral Session		
09:15	Rapid Volumetric MRI Measures of the Medial Meniscus for Osteoarthritis Studies: Validity & Responsiveness of a New Automated Method	Charles Ratzlaff, Ph.D. Presented by Jeff Duryea, Ph.D. Brigham & Women’s Hospital Boston, MA, USA
09:27	Quantitative Analysis of Tibial Subchondral Bone: Texture Analysis Outperforms Conventional Trabecular Morphometry	James W. MacKay, M.B.B.Chir., MRCP Norwich Radiology Academy Norwich, Norfolk, UK
09:39	Automatically Identifying Bone Marrow Lesions Using Multiple MR Sequences	Claire R. Donoghue, Ph.D. Manchester University Manchester, England, UK
09:51	Just Enough Interaction (JEI) Techniques for Semi-Automated Analysis of Knee MRI: Data from the Osteoarthritis Initiative	Kashyap Satyananda, M.Sc. The University of Iowa Iowa City, IA, USA
10:03	Automated Thigh Muscle & Adipose Tissue Segmentation Using an Active Shape Model –Data from the Osteoarthritis Initiative (OAI)	Jana Kemnitz, Dipl.Ing (FH) Paracelsus Medical University Salzburg, Austria
10:15	Variation of Radius of Curvature Around the Femoral Head & its Associations with Gender & Incident Radiographic Hip Osteoarthritis: Data from the Osteoarthritis Initiative.	John Lynch, Ph.D. University of California San Francisco, CA, USA
10:27	Break	
10:37	Panel Discussion: Moderators, Invited Speaker & Oral Abstract Presenters will Discuss the Question: Automated Quantitation of Data from Joint Images: How Can We Get There?	
11:45	Adjournment	
12:00	Lunch	
14:30	Optional Outing to Monterey Bay Attractions	

ISMRM Workshop on Imaging Based Measures of Osteoarthritis (8th International Workshop on Osteoarthritis)

Poster Title		Poster Author
Clinical		
1	The Atrophic Phenotype of Knee Osteoarthritis is Not Associated with More Progression of Disease When Compared with the Non-Atrophic Phenotype: the Multicenter Osteoarthritis (MOST) Study.	Michel D. Crema, M.D. Boston University Boston, MA, USA
2	Does Muscle Strength Predict Risk of Knee Replacement Independent of Radiographic Disease Status?—Data from the OAI	Adam Culvenor, P.T., Ph.D. Paracelsus Medical University Salzburg, Austria
3	Are General & Central Adiposity Associated with MRI-Assessed Structural Changes in the Knees of Older Adults?	Tomoko Fujii, M.D., M.P.H. University of Pittsburgh Pittsburgh, PA, USA
4	Joint Space Loss Rate in Prediction of Knee Replacement	Nima Hafezi-Nejad, M.D., M.P.H. Johns Hopkins University Baltimore, MD, USA
5	Longitudinal Change in Cartilage T2 Relaxation Time in Healthy Reference Subjects—Data from the Osteoarthritis Initiative	Susanne Maschek, Ph.D. Paracelsus Medical University Salzburg, Austria
6	A Patient's Perspective: Can 3D Virtual Reality Headsets Aid Communication About Osteoarthritis?	Justas Medeisis, M.Eng. Imperial College London London, England, UK
7	Patellofemoral & Tibiofemoral Bone Marrow Lesions Over Four Years: Associations with Pain & Compartment-Specific Changes	Charles Ratzlaff, Ph.D. Brigham & Women's Hospital Boston, MA, USA
8	Disseminated Idiopathic Skeletal Hyperostosis (DISH): Prevalence in a Cohort of Smokers & Genetic Associations	Elizabeth Regan, M.D., Ph.D. National Jewish Health Denver, CO, USA
9	Risk of Incident Osteoarthritis is Increased in Presence of MRI Markers of Inflammation Especially in Overweight Persons: the Poma Study	Frank Roemer, M.D. University of Erlangen-Nuremberg Erlangen, Germany
10	Radiographic Osteoarthritis & Age Related Changes of Thigh Fat Infiltration in Subjects of the OAI MRI Cohort	Hui Jing Yu, Ph.D. BioClinica, Inc. Princeton, NJ, USA

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Poster Title		Poster Author
Technical		
11	Imaging the Internal Structure of the Bovine Meniscus Using MRI	Marianne S. Black, M.Sc. Stanford University Stanford, CA, USA
12	Scanner Drift Normalization in Segmentation of Knee MRI—with Data from the OAI	Erik B. Dam, Ph.D. Biomediq Copenhagen, Denmark
13	Novel Highly-Automated Method for Segmenting Knee Cartilage from MR Images in Subjects with Varying Severity of Osteoarthritis	Ying Hui Ge, M.D., Ph.D. University of Pittsburgh School of Medicine Pittsburgh, PA, USA
14	MR Imaging of Knee Chondrocalcinosis: Comparison of Different Sequences —Data from the Osteoarthritis Initiative	Alexandra Gersing, M.D. University of California San Francisco, CA, USA
15	Volumetric GagCEST Imaging: Optimization & Comparison with T1p	Feliks Kogan, Ph.D. Stanford University Stanford, CA, USA
16	Change in Knee Cartilage T1p & T2 Relaxation Times with Roux-en-Y Gastric Bypass Surgery in Women: A Feasibility Study	Deepak Kumar, Ph.D. Medical University of South Carolina Charleston, SC, USA
17	Magnetic Resonance Imaging Compatible Knee Rig for Static Open-Chain Models of Knee Extension	Laura Lane, B.Sc. New Mexico Institute of Mining & Technology Socorro, NM, USA
18	3D gagCEST in Knee Cartilage at 7T Using High Density Receiver Arrays	Razmara Nizak, M.Sc. UMC Utrecht Utrecht, The Netherlands
19	Atlas-Based Fully Automatic T1p Analysis of the Knee Articular Cartilage	Valentina Padoia, Ph.D. University of California San Francisco, CA, USA
20	Gray Level Co-Occurrence Matrix Approach for T2 Analysis of Cartilage in Knee Osteoarthritis	Arttu P. Peuna, B.Sc. Oulu University Hospital Oulu, Finland
21	Longitudinal 4D Cartilage Segmentation of Knee MRI: Data from the Osteoarthritis Initiative	Kashyap Satyananda, M.Sc. University of Iowa Iowa City, IA, USA
22	3D Imaging of Bone Local Microstructures in Human Tibia in Osteoarthritis	Jérôme Thevenot, Ph.D. University of Oulu Oulu, Finland
23	Challenges for Implementation of T2-Mapping in a Large Clinical Trial of High Tibial Osteotomy: a Human Cadaver Study to Assess the Feasibility of T2-Mapping MRI Near Metal	Joost Verschueren, M.D. Erasmus University Medical Center Rotterdam, The Netherlands

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Poster Title		Poster Author
Mixed		
24	3D MRI-Based Statistical Shape Modeling to Investigate Associations of Knee Bone Shape with Incident Osteoarthritis: the Osteoarthritis Initiative	Anand Dharia, B.Sc. University of California Berkeley, CA, USA
25	Essential Things You Should Know When Using Knee Joint Space Width Measurements from the Osteoarthritis Initiative Datasets	Jeffrey Duryea, Ph.D. Brigham & Women's Hospital Boston, MA, USA
26	Association of the Chronic Wrist Symptoms & Scapholunate Joint Motion in Four-Dimensional Computed Tomography	Nima Hafezi-Nejad, M.D., M.P.H. Johns Hopkins University Baltimore, MD, USA
27	Short-Term Changes with Weight-Loss in MRI Markers of Knee Cartilage Composition & Quadriceps Adiposity, & Serum Markers of Adiposity & Inflammation: a Pilot Study	Deepak Kumar, Ph.D. Medical University of South Carolina Charleston, SC, USA

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