

4th International Workshop on Imaging Based Measures of Osteoarthritis

June 2nd to 4th 2010

Vancouver, BC, Canada

Imaging joint function and dysfunction: the connection between joint mechanics and osteoarthritis

PROGRAM

THE PRECOURSE, ALL INVITED LECTURES, AND PODIUM SESSIONS TAKE PLACE IN THE FOREST SCIENCES CENTRE, 2424 MAIN MALL, ROOM 1005



Wednesday, June 2, 2010

FOREST SCIENCES CENTRE, 2424 MAIN MALL

08:00-15:30 Registration desk open (*atrium, Forest Sciences Centre*)

9:00-12:00 Precourse in joint mechanics (*room 1005, Forest Sciences Centre*)

Participants will receive an introduction to joint mechanics, including the current state of understanding of joint biomechanics and the limitations of current methods for assessing mechanics in human and animal joints.

The course consists of three modules, each of which focuses on a different approach to measuring joint mechanics. Each module includes a short lecture component and hands-on exercises.

10:30 – 11:00 Coffee Break

12:00- 13:30 Lunch (*atrium, Forest Sciences Centre*)

13:30-15:00 Invited Lectures: NOVEL APPROACHES TO OA IMAGING (*room 1005, Forest Sciences Centre*)

KINEMATICS, MECHANICS AND OA
Scott Tashman, Pittsburgh

IMAGING WEIGHTBEARING AND MOVEMENT USING MRI
Garry Gold, Stanford

MENISCAL PATHOLOGY AND OA
Ali Guermazi, Boston University

15:00-15:30 Coffee Break (*atrium, Forest Sciences Centre*)

15:45-17:00 Podium Session 1 (*room 1005, Forest Sciences Centre*)

15:45 IN VIVO CARTILAGE COMPRESSION PATTERNS IN HEALTHY AND OA KNEES
Cotofana S., Eckstein F., Wirth W., Souza R.B., Li X., Wyman B.T.,
Hellio-Le Graverand M.P., Link T.M., Majumdar S.

16:00 AGE DEPENDENT CHANGES OF SODIUM CONCENTRATION IN HUMAN KNEE CARTILAGE MEASURED AT 7T
Kassey V.B., Ramanathan G., Shore A., Hari H., Thomas C. and Reddy R.

16:15 A DYNAMIC MRI MEASUREMENT METHOD FOR KNEE BIOMECHANICS
d'Entremont A.G., Nordmeyer-Massner J.A., Bos C., Wilson D.R., Pruessmann K.P.

16:30 EFFECT OF B0 MAGNETIC FIELD CHANGES ON QUANTITATIVE $T_{1\rho}$ RELAXATION MEASUREMENTS
Thedens D.R., Klocke N.F., Martin J.A., Baer T.E., Pedersen D.R.

16:45 QUANTITATIVE MRI OF ARTICULAR CARTILAGE: A COMPARISON OF $T_{1\rho}$, T_2 MAPPING, AND SODIUM MRI IN HEALTHY AND ARTHRITIC SUBJECTS
Vogelsong M.A., Staroswiecki E., Pappas G., Hargreaves B.A., Han E., Safran M., Gold G.E.

18:30 Dinner (Cecil Green Park House, 6251 Cecil Green Park Road)

Cecil Green Park House is a 20 minute walk from the Marine Drive Accommodations and the Forest Sciences Centre, and somewhat closer to the Walter Gage Residences and the West Coast Suites. Please refer to the campus map.

Thursday, June 3, 2010

FOREST SCIENCES CENTRE, 2424 MAIN MALL

08:00-14:00 Registration desk open (*atrium, Forest Sciences Centre*)

09:00-10:30 Invited Lectures: RECENT EVIDENCE FROM LARGE COHORTS (*room 1005, Forest Sciences Centre*)

EVIDENCE FOR THE ROLE OF ALIGNMENT AND MECHANICS - LARGE COHORTS

David Hunter, University of Sydney

CARTILAGE MORPHOMETRY DATA FROM THE OAI - NEW INSIGHTS ON MEASURING OA PROGRESSION.

Felix Eckstein, PMU, Salzburg

COMPARING THE RESPONSIVENESS OF IMAGING MODALITIES IN OA

Elena Losina, Harvard

10:30 – 11:00 Coffee Break (*atrium, Forest Sciences Centre*)

11:15 – 12:30 Podium Session 2 (*room 1005, Forest Sciences Centre*)

11:15 THE RELATIONSHIP BETWEEN STRUCTURAL PATHOLOGY ASSESSED BY MAGNETIC RESONANCE IMAGING OF THE KNEE AND CREPITUS IN A POPULATION-BASED COHORT WITH KNEE PAIN.

Crema M.D., Guermazi A., Sayre E.C., Roemer F.W., Marra M.D., Wong H., Thorne A., Singer J, Esdaile J.M., Kopec J.A., Nicolaou S., Cibere J.

11:30 DEVELOPMENT OF CARTILAGE THICKNESS, POST TRAUMATIC BONE MARROW LESIONS AND JOINT FLUID VOLUMES AFTER ACUTE ACL DISRUPTION – A 2 YEAR PROSPECTIVE MRI STUDY

Frobell R.B.

11:45 MRI-ASSESSED PREVALENCE OF CARTILAGE DAMAGE AND OSTEOPHYTES: A DESCRIPTIVE STUDY OF THE ATROPHIC AND HYPERTROPHIC PHENOTYPES OF KNEE OSTEOARTHRITIS IN THE FRAMINGHAM COHORT

Roemer F.W., Guermazi A., Niu J., Zhang Y., Felson D.T.

12:00 THE EFFECT OF KNEE-BENDING ACTIVITIES ON CARTILAGE T2 VALUES AND WORMS

Hovis K.K., Haugom B.D., Baum T., Souza R.B., Stehling C., Pialat J.B., Link T.M.

12:15 NATURAL HISTORY OF RADIOGRAPHIC FEATURES OF HAND OA OVER 10 YEARS

Englund M., Paradowski P.T., Lohmander L.S.

12:30-14:00 Lunch and poster viewing (*atrium, Forest Sciences Centre*)

14:00- 17:00 POSTER SESSION (*atrium, Forest Sciences Centre*)

18:00 Banquet (Museum of Anthropology, 6393 North West Marine Drive)

The Museum of Anthropology is a 20 minute walk from the Marine Drive Accommodations and the Forest Sciences Centre, and somewhat closer to the Walter Gage Residences and the West Coast Suites. Please refer to the campus map.

Guided tours of the museum will leave the museum main entrance at 18:00 and 18:30.

Friday, June 4, 2010

FOREST SCIENCES CENTRE, 2424 MAIN MALL

08:00-12:00 Registration desk open (atrium, Forest Sciences Centre)

09:00-10:30 Invited Lectures: HIP DEFORMITIES: A CLEAR CASE OF MECHANICAL ETIOLOGY? (room 1005, Forest Sciences Centre)

HIP IMAGING

Brian Hargreaves, Stanford

HIP MECHANICS

Tom Brown, Iowa

ROLE OF IMAGING IN SURGICAL PLANNING

Young-Jo Kim, Harvard

10:30 – 11:00 Coffee Break (atrium, Forest Sciences Centre)

11.15 – 12.30 Podium Session 3 (room 1005, Forest Sciences Centre)

11:15 QUADRICEPS MUSCLE ATROPHY ACROSS A CLINICAL SPECTRUM OF KNEE OSTEOARTHRITIS

Berger M.J., McKenzie C.A., Chess D.G., Harper-Little C., Doherty T.J.

11:30 SELECTION OF COMPARABLE ANATOMICAL LOCATIONS OF MUSCLE CROSS SECTIONS IN THE OSTEOARTHRITIS INITIATIVE MRI DATA

Dannhauer T., Wirth W., Eckstein F.

11:45 EARLY SUBCHONDRAL PLATE THINNING IN DIFFERENT EXPERIMENTAL CANINE MODELS OF OA IS INTRINSIC TO CARTILAGE DEGENERATION WHILE TRABECULAR CHANGES ARE RELATED TO UNLOADING.

Intema F., Mastbergen S.C., Marijnissen A.C.A., Bijlsma J.W.J., Weinans H., Hazewinkel H.A.W., Lafeber F.P.J.G.

12:00 QUANTIFYING SUBCHONDRAL BONE DENSITY CHANGES FROM CLINICAL CT DATA IN OSTEOARTHRITIC ANKLES FOLLOWING JOINT DISTRACTION

Thomas T.P., Intema F., Anderson D.D., Lafeber F.P.J.G., Brown T.D., Amendola A., Saltzman C.L.

12:15 SUBCHONDRAL BONE TRABECULAR INTEGRITY PREDICTS AND CHANGES CONCURRENTLY WITH RADIOGRAPHIC AND MRI DETERMINED OSTEOARTHRITIS PROGRESSION

Kraus V.B., Feng S., Wang S., White S., Ainslie M., Hellio-Le Graverand M., Brett A., Eckstein F., Charles H.C.

12:30-14:00 Lunch (atrium, Forest Sciences Centre)

14:00- 15:30 Podium Session 4 (room 1005, Forest Sciences Centre)

14:00 COMPARISON OF BLOKS AND WORMS SCORING SYSTEMS. LONGITUDINAL ASSESSMENT OF KNEE MRIS FOR OSTEOARTHRITIS AND SUGGESTED PREFERENCES BASED ON PERFORMANCE: DATA FROM THE OAI.

Felson D.T., Lynch J., Guermazi A., Roemer F.W., Niu J., McAlindon T., Nevitt M.C.

14:15 SENSITIVITY TO CHANGE OF KNEE IMAGES DIGITAL ANALYSIS COMPARED TO ALTMAN GRADING FOR CLASSIFICATION OF RADIOGRAPHIC PROGRESSION IN EARLY OA

Kinds M.B., Bierma-Zeinstra S.M.A., Marijnissen A.C.A., Welsing P.M.J., Lafeber F.P.J.G.

14:30 COMPARISON OF ONE-YEAR VERSUS TWO-YEAR RATE OF CHANGE AND SENSITIVITY TO CHANGE IN REGIONAL CARTILAGE THICKNESS IN OSTEOARTHRITIS

Wirth W., Larroque S., Davies R.Y., Nevitt M., Gimona A., Baribaud F., Lee J.H., Benichou O., Wyman B., Hudelmaier M., Maschek S., Eckstein F., for the OAI investigators

14:45 EARLY DETECTION OF CHANGES IN ARTICULAR CARTILAGE MORPHOLOGY: DATA FROM THE OSTEOARTHRITIS INITIATIVE

Tamez-Peña J.G., González P.C., Schreyer E., Farber, J., Totterman, S.

15:00 ENRICHING OA STUDY POPULATIONS FOR CARTILAGE THINNING

Buck R.J., Hellio Le Graverand M.P., Hunter D.J., Kraus V.B., Nemirovskyi O., Sunyer T., Vignon E., Wyman B.T., Eckstein F.

15:15 COMPOSITIONAL MRI ASSESSMENT OF THE NUCLEUS PULPOSUS OF HEALTHY AND DEGENERATIVE LUMBAR DISKS BY T2-MAPPING AND ASSOCIATION WITH MORPHOLOGIC SEMI-QUANTITATIVE GRADING

Dudek A., Roemer F.W., Welsch G., Wimmer M., Trattnig S., Bohndorf K.

15:30 – 16:00 *Coffee Break (atrium, Forest Sciences Centre)*

16:00 – 17:30 *Round table discussion (room 1005, Forest Sciences Centre)*

The round table discussion, carried out in part in break-out groups, will produce a meeting summation, define a research agenda arising from the meeting, and establish consensus on the importance of functional positioning for imaging osteoarthritis.