## 41st Annual Musculoskeletal Imaging Course: Fundamentals to Advanced Concepts

### Session A: Sports Medicine Imaging (Pentland)

<table>
<thead>
<tr>
<th>Time</th>
<th>Session B: Musculoskeletal Disease (Sidlau)</th>
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</thead>
<tbody>
<tr>
<td>08:00 – 10:00</td>
<td>Combined Session (Pentland)</td>
</tr>
<tr>
<td>BREAK</td>
<td>10:00 – 10:30</td>
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<tr>
<td>Shoulder: Cuff</td>
<td>10:30 – 12:30</td>
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<tr>
<td>LUNCH (On Your Own)</td>
<td>12:30 – 14:00</td>
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<tr>
<td>Shoulder: Labrum</td>
<td>14:00 – 15:30</td>
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<tr>
<td>BREAK</td>
<td>15:30 – 16:00</td>
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<tr>
<td>Elbow</td>
<td>16:00 – 17:30</td>
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</tbody>
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### Session B: Musculoskeletal Disease (Sidlau)

<table>
<thead>
<tr>
<th>Time</th>
<th>Session A: Sports Medicine Imaging (Pentland)</th>
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<tbody>
<tr>
<td>08:00 – 10:00</td>
<td>Combined Session (Pentland)</td>
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<tr>
<td>Wrist</td>
<td>08:00 – 10:00</td>
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<tr>
<td>BREAK</td>
<td>10:00 – 10:30</td>
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<tr>
<td>Upper Extremity Rapid Fire</td>
<td>10:30 – 12:00</td>
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<tr>
<td>LUNCH (On Your Own)</td>
<td>12:00 – 13:30</td>
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<tr>
<td>Hip and Groin</td>
<td>13:30 – 15:30</td>
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<tr>
<td>BREAK</td>
<td>15:30 – 16:00</td>
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<tr>
<td>Knee</td>
<td>16:00 – 17:30</td>
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### Day 3, Saturday, October 18, 2014

<table>
<thead>
<tr>
<th>Time</th>
<th>Session A: Sports Medicine Imaging (Pentland)</th>
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<tbody>
<tr>
<td>08:00 – 10:00</td>
<td>CARTILAGE</td>
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<tr>
<td>Break</td>
<td>10:00 – 10:30</td>
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<tr>
<td>Hot Topic: Injectables</td>
<td>10:30 – 12:15</td>
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<td>LUNCH (On Your Own)</td>
<td>12:15 – 13:30</td>
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<tr>
<td>Advanced Imaging Techniques: How I Do It</td>
<td>13:30 – 15:30</td>
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<tr>
<td>Break</td>
<td>15:30 – 16:00</td>
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<tr>
<td>16:00 – 17:30</td>
<td>Film Quiz Panel (Pentland)</td>
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On behalf of the International Skeletal Society, we would like to welcome you to the ISS 41st Annual Meeting and Imaging Update Courses to be held at the Edinburgh International Conference Centre, only a short walk from the conference hotel, the Sheraton Grand Hotel & Spa. This meeting brings together many of the best lecturers on musculoskeletal diagnosis from around the world. This will be the first time that the ISS has been back to Edinburgh for almost 30 years. It is the capital of Scotland, rich in associations with the past and has many historic buildings, including Edinburgh Castle and Holyrood Palace, all within easy walking distance from the conference and hotels. The social program takes full advantage of Scotland’s cultural heritage.

The Refresher Course is a comprehensive review of the imaging of musculoskeletal abnormalities, and adopts a multimodality approach to the subject matter. Except for the opening combined session and the concluding film quiz panel, the course runs as two parallel sessions, and you are encouraged to move between them according to your particular interests. Topics include sports injuries, bone and soft tissue tumors, bone marrow imaging, arthritis, trauma and metabolic bone disease, and include clinical perspective lectures by rheumatologists and orthopedic surgeons. Where appropriate, lectures on imaging protocols and image-guided interventions have also been incorporated into the relevant sessions. The entire course is given by world renowned experts in the fields of musculoskeletal radiology, pathology and clinical care, and has retained elements previously shown to be popular with delegates such as “rapid fire” sessions and the Film Quiz Panel. Particular highlights of this year’s course are special focus sessions dedicated to “Injectables” and “How I Do It: Advanced Imaging Techniques.”

As in previous years we are also running an optional course in Musculoskeletal Ultrasound consisting of didactic lectures and hands-on scanning sessions for those who have pre-registered. This year’s topic will concentrate on the hip.

You are encouraged to take advantage of the breaks throughout the meeting to ask questions of the speakers, and to use the optional social events to meet the faculty and either discuss any questions you may have or just say hello.

If you have any questions about the format or content of this year’s meeting please feel free to speak with either of us, or any member of program committee or organizational staff and we will be happy to help.

Thank you for joining us in Edinburgh and we hope you have an unforgettable educational, cultural and social experience.
About the International Skeletal Society

The International Skeletal Society is an interdisciplinary working group concerned with skeletal disease: its pathogenesis, diagnosis and treatment. The first meeting of the Society was held in 1972, in Washington, DC, during the Annual Meeting of the American Roentgen Ray Society. The newly formed society, with approximately 50 founding members, met for the first time in 1974. The new organization was enthusiastically received by the skeletal community, and membership has grown steadily.

KEY INFORMATION

**Members’ Meeting:** October 13 – October 15, 2014
**Special Scientific Session:** October 14, 2014
**Ultrasound Hands-On Course:** October 15, 2014
**Annual Meeting Imaging Update Course,**

PROGRAM COMMITTEE

**41st Annual Musculoskeletal Imaging Course: Fundamentals to Advanced Concepts Program Committee:**
Andrew J. Grainger, BM, BS, MRCP, FRCR; Harrogate, United Kingdom (Past Program Chair)
Theodore T. Miller, MD, FACP; New York, NY (Committee Chair)
Jon A. Jacobson, MD; Ann Arbor, MI (Sports Sub-Committee Chair)
Maryam Shahabpour, MD; Brussels, Belgium (MSK Sub-Committee Chair)
Mark W. Anderson, MD; Charlottesville, VA
Marcelo Bordalo-Rodrigues, MD; Sao Paulo, Brazil
Miriam A. Bredella, MD; Boston, MA
Xavier Demondion, MD; Lille, France
James F. Griffith, MD; Hong Kong, China
Nancy M. Major, MD; Bryn Mawr, PA
Eugene G. McNally, MD, BCh, BAO, FRCR, FRCP; Oxford, United Kingdom
Monique Reijnierse, MD; Leiden, Netherlands
Seoung-oh Yang, MD; Busan, Korea, Republic Of
Marco Zanetti, MD; Baden, Switzerland

**Local Organizing Committee**
Ian Beggs, FRCPE, FRCR; Edinburgh, United Kingdom (Committee Chair)
Laurence Bellaiche, MD; Paris, France
Johan L. Bloem, MD; Leiden, Netherlands
Andrew J. Grainger, BM, BS, MRCP, FRCR; Harrogate, United Kingdom
Steven L.J. James, MB, ChB, FRCR; West Midlands, United Kingdom
Paul G. O’Donnell, MD; Middlesex, United Kingdom

SOCIETY OFFICERS 2013 – 2014

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**President-Elect:** Lynne S. Steinbach, MD
**Secretary:** Lawrence M. White, MD
**Treasurer:** William E. Palmer, MD
**Immediate Past President:** Javier Beltran, MD
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Georgina M. Allen, BM
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Emine R. Arkun, MD
K. Gunnar Astrom, MD
Andrea Baur-Melnyk, MD
Douglas P. Beall, MD
Ian Beggs, FRCPE, FRCR
Javier Beltran, MD
Jenny T. Bencardino, MD
Donna G. Blankenbaker, MD
Alain Blum, MD, PhD
Sally Fiona M. Bonar, MD
Marcelo Bordalo-Rodrigues, MD
Miriam A. Bredella, MD
Florian M. Buck, MD
Kenneth A. Buckwalter, MD
Nathalie J. Bureau, MD
Robert S.D. Campbell, MD
Clarissa C. Moraes Do Carmo, MD
Victor N. Cassar Pullicino, MD
Avneesh Chhabra, MD
Jung-Ah Choi, MD
Anne Cotten, MD
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A. Mark Davies, MD
Marcelo R. De Abreu, MD
Claudia R. G. C. M. de Oliveira, MD
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Neils Egund, MD
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Laura M. Fayad, MD
David P. Fessell, MD
Karen Finlay, MD
Bruce B. Forster, MSc, MD, FRCPC
Michael G. Fox, MD
Alessandro Franchi, MD, PhD
Russell C. Fritz, MD
Howard Galloway, FRANZCR
Christian Glaser, MD
Elaine S. Gould, MD, FACR
Andrew J. Grainger, BM, BS, MRCP, FRCR
Ali Guermazi, MD, PhD
Soterios Gyftopoulos, MD
Alice Ha, MD, MS
Nogah Haramati, MD
Jeremiah C. Healy, MD
George Hermann, MD
Andreas Heuck, MD
Geoff Hide, MD
Benjamin Hoch, MD
Mary G. Hochman, MD, MBA
Richard J. Hughes, MD
Sinchun Huang, MD
Hakan Ilaslan, MD
Carrie Y. Inwards, MD
Jon A. Jacobson, MD
Steven L.J. James, MD
Suphaneewan Jaovisidha, MD
Anne G. Jurik, MD
Franz M. Kainberger, MD
Jeremy J. Kaye, MD
Jasvir S. Khurana, MD
Richard Kijowski, MD
Josef Kramer, MD
Mark J. Krasndorf, MD
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Thomas M. Link, MD
Robert R. Lopez, MD
Mario Maas, MD
Thomas H. Magee, MD
Julie M. McBurnie, FRCS
Theodore T. Miller, MD, FACR
Johnny U.V. Monu, MD
Timothy Eisdell Moore, MD
Matthew Moran, FRCS
William Morrison, MD
Kambiz Motamedi, MD
Michael E. Mulligan, MD
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Wilfred C.G. Peh, MD
Jeffrey J. Peterson, MD
Christian W. Pfirrmann, MD
Thomas L. Pope, Jr., MD, FACR
Michael P. Recht, MD
Winston J. Rennie, MB, MSc, FRCR, MFSEM
Donald L. Resnick, MD
Philip Robinson, MB, ChB, FRCR
Frank Roemer, MD
Lee F. Rogers, MD
Zehava S. Rogers, MD
Bruce M. Rothschild, MD
David A. Rubin, MD
Pietro Ruggieri, MD, PhD
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Naveen Subhas, MD
Mihra S. Taljanovic, MD, PhD, FACR
James Teh, MBBS, MRCP, FRCR
Andoni P. Toms, FRCR, PhD
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Prudencia Tyrrell, MD
Hilary R. Umans, MD
Daniel Vanel, MD
Lawrence M. White, MD
David J. Wilson, MD
Corrie M. Yablon, MD
Seoung-oh Yang, MD
Marco Zanetti, MD
Michael B. Zlatkin, MD
Adam C. Zoga, MD
OVERALL COURSE OUTLINE
The 41st Annual Musculoskeletal Imaging Course: Fundamentals to Advanced Concepts will consist of two parallel programs running concurrently. One will focus on sports imaging with joint based sessions including techniques of US-guided percutaneous intervention and a special focus session on injectable medications. The second will cover a wide range of musculoskeletal diseases including musculoskeletal tumors, trauma, arthritis, intervention techniques and systemic disease processes. Delegates are encouraged to move between the two streams to tailor the course to their individual needs and learning requirements. An internationally renowned faculty of musculoskeletal radiologists, orthopedic surgeons, rheumatologists and pathologists will deliver the course.

In addition, the course will feature an expert panel film interpretation session presented as a quiz to delegates and allowing them to test their knowledge against a selection of faculty members.

TARGET AUDIENCE
The target audience for this course includes general radiologists, orthopedic surgeons, rheumatologists, pathologists and allied healthcare workers with special interest in the diagnosis and therapy of musculoskeletal disease.

NEEDS
The need for the 41st Annual Musculoskeletal Imaging Course: Fundamentals to Advanced Concepts has been established from a review of written meeting evaluation surveys from individual attendees from prior meetings, personal interviews of the Executive and Program Committees, discussions with meeting attendees and society members and detailed discussions with the Program Committee membership.

As a result, this year’s program will focus on providing sessions to meet these identified needs. One track in the course will address sports injuries concentrating on advanced imaging techniques, in particular on MR and ultrasound imaging, both techniques which have revolutionized the evaluation and management of sport-related injuries. This is a complicated and challenging field for general as well as subspecialty radiologists, pathologists and clinicians involved in the evaluation and treatment of musculoskeletal disease. Individual sessions have been coordinated around themes of muscle injury, cartilage imaging techniques, including the latest clinical developments in cartilage repair, knee, shoulder, elbow, wrist and hand, the pediatric athlete, and the hip and pelvis. In addition, after very positive feedback from delegates at the last two courses, we have expanded the number of “Rapid Fire” sessions. These sessions comprise multiple short, focused, 10 minute talks focusing on a specific question, technique or problem.

The other course track will address musculoskeletal diseases including arthritis, trauma, tumors and systemic diseases affecting the musculoskeletal system. The sessions will focus on: bone tumor diagnosis, soft tissue tumors, bone marrow imaging, musculoskeletal infection, systemic conditions affecting the skeletal system, axial and appendicular trauma, arthritis and advanced imaging techniques. Additional Rapid Fire sessions will allow a number of short presentations on topics relating to bone tumors, soft tissue tumors and arthritis.

Each of the sessions in the parallel programs are focused to increase the understanding of both common and more challenging, poorly understood conditions of musculoskeletal disease, health, evaluation and treatment. The sessions are specifically designed to improve understanding of the early diagnosis of MSK conditions, which will lead to better patient outcomes. Additionally, a case/film interpretation session will present challenging clinical cases to provide a forum to discuss difficult cases and combine expert approaches to improve the learning experience and overall understanding and evaluation of the MSK system.

OBJECTIVES
At the conclusion of the the 41st Annual Musculoskeletal Imaging Course: Fundamentals to Advanced Concepts, attendees should be able to:

1. Apply real life situations to clinical practice.
2. Integrate knowledge and performance in the assessment and diagnosis of musculoskeletal sports injury, tumors, trauma and degenerative disease.
3. Identify the anatomy of normal MSK tissues, variants and mimicker of disease.
4. Identify morphologic, histologic and imaging characteristics of MSK disease.
5. Describe the specific pathology that accounts for the appearance of osseous and soft tissues in the setting of trauma, overuse, metabolic, inflammatory/autoimmune and neoplastic conditions on various imaging modalities.
6. Recognize the relationship of specific biomechanical activities, injuries and treatments to the appearance of joints, bone and soft tissues on imaging, arthroscopic and pathologic assessment.
7. Review the optimal role of imaging, surgery and histopathology in the diagnosis and management of musculoskeletal disease and health.
8. Identify the complementary role of emerging imaging techniques, modalities and interventional/therapeutic procedures in the diagnosis and management of specific musculoskeletal conditions.
9. Illustrate competency in ultrasound, MRI and therapeutic approaches in the assessment and management of the musculoskeletal system.
Accreditation Statement
This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of the University of Oklahoma College of Medicine and the International Skeletal Society. The University of Oklahoma College of Medicine is accredited by the ACCME to provide continuing medical education for physicians.

The University of Oklahoma College of Medicine designates this live activity for a maximum of **49.00 AMA PRA Category 1 Credits™**. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Programs Included in Maximum CME
The following programs are included in the maximum **AMA PRA Category 1 Credits™** as follows: **Members’ Meeting (13.75)**, the **Breakout Scientific Session (1.00)**, the **Special Scientific Session (3.75)**, the **Ultrasound Course (4.75)**, the **Pathologists/Radiologists Review of Cases (12.75)** and the **“41st Annual Musculoskeletal Imaging Course: Fundamentals to Advanced Concepts” (21.00)**. Portions of Tuesday and Wednesday’s sessions are concurrent; therefore, it is not possible to obtain full credit for all programs listed.

Conflict Resolution Statement
The University of Oklahoma College of Medicine, Office of Continuing Professional Development has reviewed this activity’s speaker and planner disclosures and resolved all identified conflicts of interest, if applicable.

Equal Opportunity Statement
The University of Oklahoma is an equal opportunity institution. [www.ou.edu/eoo](http://www.ou.edu/eoo)

Recognition by the AMA and EACCME
All CME activities approved by the American Medical Association (AMA) are recognized by the European counterpart, the EACCME. Vice-versa all CME activities approved by the EACCME are valid for recognition by the American Medical Association (AMA) towards the Physician’s Recognition Award (PRA).

Accommodation Statement
Accommodations on the basis of disability are available by contacting the International Skeletal Society at (847) 517-7225 as soon as possible.

Acknowledgement of Commercial and In-Kind Support
Commercial support is financial, or in-kind, contributions given by a commercial interest, which is used to pay all or part of the costs of a CME activity. A commercial interest is any entity producing, marketing, re-selling or distributing health care goods or services consumed by, or used on, patients.

This activity received no financial commercial support. This activity received the following in-kind support from: GE Healthcare – 5 Ultrasound Machines; Leica Microsystems – 12 Microscopes; and Siemens – 5 Ultrasound Machines

Policy on Faculty and Presenters Disclosure
It is the policy of the University of Oklahoma College of Medicine that the faculty, presenters and joint providers disclose real or apparent conflicts of interest relating to the topics of this educational activity, and also disclose discussions of unlabeled/unapproved uses of drugs or devices during their presentation(s).

Disclaimer Statement
Statements, opinions and results of studies contained in the program are those of the presenters/authors and do not reflect the policy or position of the Board of Regents of the University of Oklahoma (“OU”) nor does OU provide any warranty as to their accuracy or reliability.

Every reasonable effort has been made to faithfully reproduce the presentations and material as submitted. However, no responsibility is assumed by OU for any claims, injury and/or damage to persons or property from any cause, including negligence or otherwise, or from any use or operation of any methods, products, instruments or ideas contained in the material herein.

Faculty Disclosure Report
The University of Oklahoma College of Medicine and the Irwin H. Brown Office of Continuing Professional Development must ensure balance, independence, objectivity and scientific rigor in all its activities. We have implemented a process where everyone who is in a position to control the content of an education activity has disclosed to us all relevant financial relationships with any commercial interest. In addition, should it be determined that a conflict of interest exists as a result of a financial relationship one may have, this will be resolved prior to the activity. This policy is designed to provide the target audience with an opportunity to review any affiliations between the CME organizers/presenters and supporting organizations for the purpose of determining the potential presence of bias or influence over educational content. All registered attendees will receive an email in advance of the meeting which will provide a link to the ISS disclosure report. For onsite registrants, a sticker will be placed on the registration packet with a link and QR code which will provide access to the ISS disclosure report.
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<tr>
<th>Time</th>
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<th>Location</th>
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<tbody>
<tr>
<td>07:00 – 17:30</td>
<td>Registration/Information Desk Hours</td>
<td>14:00 – 15:30</td>
<td>Shoulder: Labrum&lt;br&gt;Moderators:&lt;br&gt;Timothy Eisdell Moore, MD&lt;br&gt;Michael B. Zlatkin, MD</td>
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<tr>
<td>07:00 – 16:00</td>
<td>Exhibit Hall Hours</td>
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<td>07:00 – 08:00</td>
<td>Breakfast</td>
<td>14:00 – 14:15</td>
<td>Imaging Techniques for Labrocapsular Structures&lt;br&gt;Moderators:&lt;br&gt;Michael B. Zlatkin, MD</td>
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<td>18:30 – 20:30</td>
<td>Welcome Reception</td>
<td>14:15 – 14:30</td>
<td>SLAP Tears – Do I Need to Know Them All?&lt;br&gt;Moderator: Javier Beltran, MD</td>
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<td>08:00 – 08:10</td>
<td>Introduction</td>
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<td>08:10 – 10:00</td>
<td>COMBINED SESSION – PENTLAND</td>
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<td></td>
<td>Bone</td>
<td>14:30 – 14:45</td>
<td>Imaging of Bankart Injuries: Making Sense of the Alphabet Soup&lt;br&gt;Moderator: Donna G. Blankenbaker, MD</td>
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<td>Moderators:</td>
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<td>Sally Fiona M. Bonar, MD</td>
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<td>Jeremy J. Kaye, MD</td>
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<td>08:10 – 08:35</td>
<td>Bone: Structure and Function</td>
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<td>Donald L. Resnick, MD</td>
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<td>08:35 – 08:55</td>
<td>Radiopathologic Correlation of Osseous Trauma</td>
<td>14:45 – 15:00</td>
<td>Posterior Glenohumeral Instability&lt;br&gt;Moderator: Mark W. Anderson, MD</td>
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<td>Sally Fiona M. Bonar, MD</td>
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<td>08:55 – 09:15</td>
<td>Radiopathologic Correlation of Osseous Infection</td>
<td>15:00 – 15:15</td>
<td>Surgical Techniques for Labral Repair and Instability&lt;br&gt;Moderator: Julie M. McBirnie, FRCS</td>
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<td>Edward F. Di Carlo, MD</td>
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<td>09:15 – 09:40</td>
<td>Radiopathologic Correlation of Osseous Tumors</td>
<td>15:15 – 15:30</td>
<td>Imaging of the Postoperative Labrum: Is There a Re-Tear?&lt;br&gt;Moderator: Jung-Ah Choi, MD</td>
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<td>Julie Fanburg-Smith, MD</td>
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<td>09:40 – 10:00</td>
<td>Radiopathologic Correlation of Metabolic and Systemic Diseases of Bone</td>
<td>15:30 – 16:00</td>
<td>Break&lt;br&gt;Moderator: Nathalie J. Bureau, MD&lt;br&gt;Kathryn Stevens, MD</td>
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<td>Mark D. Murphey, MD</td>
<td>16:00 – 17:30</td>
<td>Elbow&lt;br&gt;Moderators:&lt;br&gt;Nathalie J. Bureau, MD&lt;br&gt;Kathryn Stevens, MD</td>
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<td>10:00 – 10:30</td>
<td>Break</td>
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<td>10:30 – 17:30</td>
<td>BREAKOUTS: CONCURRENT SESSIONS</td>
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<tr>
<td>10:30 – 12:30</td>
<td>SESSION A: SPORTS MEDICINE IMAGING – PENTLAND</td>
<td>16:00 – 16:15</td>
<td>Imaging Techniques as They Apply to Anatomy&lt;br&gt;Moderator: Florian M. Buck, MD</td>
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<td>Shoulder: Cuff</td>
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<td>Moderators:</td>
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<td></td>
<td>Bruce B. Forster, MSc, MD, RCPC&lt;br&gt;William E. Palmer, MD</td>
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<td>10:30 – 10:50</td>
<td>Imaging of Rotator Cuff Tears (US and MRI)</td>
<td>16:15 – 16:35</td>
<td>Biceps/Triceps/Epicondylitis (US and MRI)&lt;br&gt;Moderator: Nathalie J. Bureau, MD</td>
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<td>Ian Beggs, FRCPE, FRCR</td>
<td>16:35 – 16:50</td>
<td>Elbow Instability: Implication for Ligaments&lt;br&gt;Moderator: Kathryn Stevens, MD</td>
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<td>10:50 – 11:10</td>
<td>Techniques of Rotator Cuff Repair</td>
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<td>Julie M. McBirnie, FRCS</td>
<td>17:00 – 17:15</td>
<td>Peripheral Nerves&lt;br&gt;Moderator: Kambiz Motamedi, MD</td>
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<tr>
<td>11:10 – 11:30</td>
<td>Imaging of the Repaired Rotator Cuff</td>
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<td>William E. Palmer, MD</td>
<td>17:15 – 17:30</td>
<td>Interventional Techniques&lt;br&gt;Moderator: David P. Fessell, MD</td>
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<tr>
<td>11:30 – 11:50</td>
<td>Impingement Syndromes</td>
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<td>Jenny T. Bencardino, MD</td>
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<td>11:50 – 12:10</td>
<td>Rotator Interval and Biceps Injuries</td>
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<td>Lynne S. Steinbach, MD</td>
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<td>12:10 – 12:30</td>
<td>AC Joint: Injury and Diseases</td>
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<td>Bruce B. Forster, MSc, MD, FRCP</td>
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<td>12:30 – 14:00</td>
<td>Lunch</td>
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### SESSION B: MUSCULOSKELETAL DISEASE – SIDLAW

**10:30 – 12:30**

**Bone Tumors**

**Moderators:**
- Mary G. Hochman, MD, MBA
- Sinchun Hwang, MD

**10:30 – 10:45**

When Are Radiographs Not Enough?
Daniel Vanel, MD

**10:45 – 11:05**

Bone Forming Tumors: Imaging
Steven L.J. James, MD

**11:05 – 11:15**

Bone Forming Tumors: How Does Imaging Help Me?
Jasvir S. Khurana, MD

**11:15 – 11:35**

Cartilage Forming Tumors: Imaging
Paul G. O’Donnell, MD

**11:35 – 11:45**

Cartilage Forming Tumors: How Does Imaging Help Me?
Claudia R. G. C. M. de Oliveira, MD

**11:45 – 12:05**

Surface Lesions of Bone: Imaging
A. Mark Davies, MD

**12:05 – 12:15**

Surface Lesions of Bone: How Does Imaging Help Me?
Carrie Y. Inwards, MD

**12:15 – 12:30**

Psuedotumors of Bone
Mary G. Hochman, MD, MBA

**12:30 – 14:00**

Lunch

**14:00 – 15:30**

Rapid Fire Bone Tumors

**Moderators:**
- Edward F. DiCarlo, MD
- Peter L. Munk, MDCM, FRCP, FSIR

**14:00 – 14:10**

Periosteal Reaction: The Good, the Bad and the Ugly
Geoff Hide, MD

**14:10 – 14:20**

Assessing Response to Neoadjuvant Therapy
Laura M. Fayad, MD

**14:20 – 14:30**

Post Operative Surveillance: Pitfalls and Pearls
Sinchun Hwang, MD

**14:30 – 14:40**

Bone Biopsy: Tips and Tricks
Peter L. Munk, MDCM, FRCP, FSIR

**14:40 – 14:50**

Multiple Bone Lesions: Is it Metastatic Disease?
K. Gunnar Astrom, MD

**14:50 – 15:00**

MR Imaging: What Protocols Are Useful?
Marco Zanetti, MD

**15:00 – 15:10**

PET CT: Pitfalls and Artifacts
Jeffrey J. Peterson, MD

**15:10 – 15:20**

PET MRI: Pitfalls and Artifacts
Seoung-oh Yang, MD

**15:20 – 15:30**

What Does the Surgeon Want to See in the Radiology Report?
Matthew Moran, FRCS

**15:30 – 16:00**

Break

**16:00 – 17:30**

Rapid Fire Soft Tissue Tumors

**Moderators:**
- Alessandro Franchi, MD, PhD
- Pietro Ruggieri, MD, PhD

**16:00 – 16:10**

The Fat Containing Tumor: Is it Benign or Malignant?
Suphaneewan Jaovisidha, MD

**16:10 – 16:20**

Soft Tissue Sarcomas: How I Describe Them and Stage Them
David M. Panicek, MD

**16:20 – 16:30**

Calcium in Soft Tissue Masses: Good or Bad?
Benjamin Hoch, MD

**16:30 – 16:40**

Differential Diagnosis of a Soft Tissue Mass: Does Location Help?
Mark D. Murphey, MD

**16:40 – 16:50**

MR Imaging: What Protocols Are Useful?
Philip Robinson, MB, ChB, FRCP

**16:50 – 17:00**

US of Soft Tissue Tumors: When is it Helpful?
Joseph G. Craig, MBChB

**17:00 – 17:10**

Biopsy of Soft Tissue Tumors: How Do I Do It?
Jean Luc Drape, MD

**17:10 – 17:20**

Soft Tissue Tumor Mimickers
Alain Blum, MD, PhD

**17:20 – 17:30**

Post Operative Surveillance: Pitfalls and Pearls
David M. Panicek, MD
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<th>Time</th>
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<td>07:00 – 17:30</td>
<td>Registration/Information Desk Hours</td>
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<td>07:00 – 16:00</td>
<td>Exhibit Hall Hours</td>
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<td>07:00 – 08:00</td>
<td>Breakfast</td>
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<td>08:00 – 17:30</td>
<td>BREAKOUTS: CONCURRENT SESSIONS</td>
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<td>08:00 – 10:00</td>
<td>SESSION A: SPORTS MEDICINE IMAGING – PENTLAND</td>
<td>Wrist</td>
<td>Clarissa C. Moraes Do Carmo, MD, Karen Finlay, MD</td>
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<td>08:00 – 08:20</td>
<td>Imaging Techniques</td>
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<td>James Teh, MBBS, MRCP, FRCR</td>
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<td>08:20 – 08:40</td>
<td>Imaging of Ulnar-Sided Wrist Pain</td>
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<td>Soterios Gyftopoulos, MD</td>
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<td>08:40 – 09:00</td>
<td>Carpal Bones: Dead or Alive?</td>
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<td>Miha S. Taljanovic, MD, PhD, FACR</td>
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<td>09:00 – 09:20</td>
<td>Ligaments and Carpal Instability Patterns</td>
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<td>Maryam Shahabpour, MD</td>
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<td>09:20 – 09:40</td>
<td>Tendon Disorders: MRI and US</td>
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<td>Karen Finlay, MD</td>
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<td>10:00 – 10:30</td>
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<td>10:30 – 12:00</td>
<td>Upper Extremity Rapid Fire</td>
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<td>Winston J. Rennie, MB, MSc, FRCR, MFSEM</td>
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<td>10:30 – 13:30</td>
<td>Hip and Groin</td>
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<td>Haron Obaid, MD, FRCS, FRCR, FRCPC</td>
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<td>13:30 – 13:40</td>
<td>Labrum: How to Image and Describe</td>
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<td>Miriam A. Bredella, MD</td>
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<td>13:40 – 13:55</td>
<td>Femoroacetabular Impingement: Beyond the Labrum</td>
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<td>Christian W. Pfirrmann, MD</td>
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<td>13:55 – 14:10</td>
<td>Extra- Articular Impingement</td>
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<td>Miriam A. Bredella, MD</td>
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<td>Trochanteric Pain Syndrome</td>
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<td>Mini N. Pathria, MD</td>
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<td>14:30 – 14:50</td>
<td>Hamstring: Anatomy and Injury</td>
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<td>Jean P. Schils, MD</td>
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<td>14:50 – 15:10</td>
<td>Groin Pain</td>
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<td>Adam C. Zoga, MD</td>
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<td>15:10 – 15:30</td>
<td>Interventional Techniques</td>
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<td>Philip Robinson, MB, ChB, FRCR</td>
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<td>15:30 – 16:00</td>
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<td>16:00 – 16:15</td>
<td>Meniscal Tears: Classification and</td>
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<td>Leanne L. Seeger, MD, FACR</td>
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<td>16:15 – 16:30</td>
<td>Nomenclature</td>
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<td>16:30 – 16:45</td>
<td>ACL and PCL: Pre-Op and Post-Op</td>
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<td>Thomas L. Pope, Jr., MD, FRCR</td>
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<td>17:00 – 17:15</td>
<td>Posterolateral Corner: What’s Important?</td>
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<td>Andrew J. Grainger, BM, BS, MRCP, FRCR</td>
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<td>17:15 – 17:30</td>
<td>Patellofemoral Pain</td>
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<td>Nogah Shabshin, MD, MBA</td>
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<td>11:00 – 11:10</td>
<td>Pectoralis Tears: How to Image and How to Interpret</td>
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<td>Russell C. Fritz, MD</td>
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<td>11:10 – 11:20</td>
<td>Dynamic US of the Shoulder and Elbow: When is it Useful?</td>
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<td>Ronald S. Adler, MD, PhD</td>
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<td>11:20 – 11:30</td>
<td>US-Guided Interventions of the Wrist and Hand</td>
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<td>Jeremiah C. Healy, MD</td>
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<td>11:30 – 11:40</td>
<td>Adhesive Capsulitis</td>
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<td>Howard Galloway, FRANZCR</td>
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<td>11:40 – 11:50</td>
<td>Image-Guided Treatment of Calcific Tendinosis</td>
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<td>Andrew J. Grainger, BM, BS, MRCP, FRCR</td>
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<td>11:50 – 12:00</td>
<td>Other Image-Guide Percutaneous Shoulder Treatments</td>
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<td>Luca M. Sconfinenza, MD, PhD</td>
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<td>Time</td>
<td>Session B: Musculoskeletal Disease – Sidlaw</td>
<td>Time</td>
<td>Appendicular Trauma</td>
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<td>08:00</td>
<td>Marrow and Infection</td>
<td>12:00</td>
<td>Lunch</td>
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| 08:00  | Marrow Imaging: Normal Bone Marrow and Benign Lesions Simulating Disease | 13:30  | How to Avoid Mistakes Radiographically | Moderators: Leon Lenchik, MD  
|        | Andrea Baur-Melnyk, MD                     | 13:30  | Leon Lenchik, MD    |
| 08:00  | Marrow Edema Pattern: What is the Differential Diagnosis? | 13:30  | Fracture Patterns: Don't Forget to Look Elsewhere | Lee F. Rogers, MD  
|        | Mark E. Schweitzer, MD                     | 14:10  | CT and MRI of Osseous Trauma: What More Do They Add? | Michael E. Mulligan, MD  
| 08:40  | Marrow Replacement Disorders and Whole Body Imaging | 14:30  | US of Osseous Trauma: Is There a Role? | Theodore T. Miller, MD, FACP  
|        | Michael E. Mulligan, MD                    | 14:30  | US of Osseous Trauma: Is There a Role? | Theodore T. Miller, MD, FACP  
| 09:00  | Atypical Musculoskeletal Infections        | 14:50  | How to Describe Ankle Fractures | Nogah Haramati, MD  
|        | Simon Ostlere, MD                          | 15:10  | How to Describe Ankle Fractures | Nogah Haramati, MD  
| 09:40  | Pediatric Infections: Special Considerations | 16:00  | Metabolic and Systemic Diseases | Moderators: Elaine S. Gould, MD, FACR  
|        | David J. Wilson, MD                        | 16:00  | Metabolic and Systemic Diseases | Moderators: Elaine S. Gould, MD, FACR  
|        |                                              | 16:00  | Bone Densitometry: Pitfalls in Interpretation | Josef Kramer, MD  
| 10:00  | Break                                      | 16:15  | Renal Osteodystrophy, Rickets, and Osteomalacia | Elaine S. Gould, MD, FACR  
| 10:30  | Arthritis Rapid Fire                       | 16:15  | Renal Osteodystrophy, Rickets, and Osteomalacia | Elaine S. Gould, MD, FACR  
|        | Moderators: Neils Egund, MD                 | 16:30  | CRMO and Sapho Syndrome | Simon Ostlere, MD  
| 10:40  | Radiographic Patterns of Disease           | 16:30  | CRMO and Sapho Syndrome | Simon Ostlere, MD  
|        | Franz M. Kainberger, MD                    | 16:45  | Storage Diseases    | George Hermann, MD  
| 10:50  | US of Arthritis: When is it Useful?        | 16:45  | Storage Diseases    | George Hermann, MD  
|        | Robert R. Lopez, MD                        | 17:00  | Sickle Cell Disease and Hemophilia | Emine R. Arkun, MD  
| 11:00  | MRI of Arthritis: How to Do it and What More Does it Add? | 17:15  | Pagets Disease: Is it Gone or Just Hiding? | Victor N. Cassar Pullicino, MD  
| 11:10  | Patterns of Crystal Deposition             | 17:15  | Pagets Disease: Is it Gone or Just Hiding? | Victor N. Cassar Pullicino, MD  
|        | Bruce M. Rothschild, MD                    | 17:15  | Pagets Disease: Is it Gone or Just Hiding? | Victor N. Cassar Pullicino, MD  
| 11:10  | Sacroiliitis: Imaging Strategies and Findings | 18:00  | Pagets Disease: Is it Gone or Just Hiding? | Victor N. Cassar Pullicino, MD  
|        | Anne Cotten, MD                            | 18:00  | Pagets Disease: Is it Gone or Just Hiding? | Victor N. Cassar Pullicino, MD  
| 11:20  | Early MRI Appearances of Spondyloarthropathies | 19:00  | Pagets Disease: Is it Gone or Just Hiding? | Victor N. Cassar Pullicino, MD  
|        | Robert G.W. Lambert, MBBCh, FRCR, FRCPC    | 19:00  | Pagets Disease: Is it Gone or Just Hiding? | Victor N. Cassar Pullicino, MD  
| 11:30  | OA: Is it a Disease?                       | 20:00  | Pagets Disease: Is it Gone or Just Hiding? | Victor N. Cassar Pullicino, MD  
|        | Ali Guermazi, MD, PhD                      | 20:00  | Pagets Disease: Is it Gone or Just Hiding? | Victor N. Cassar Pullicino, MD  
| 11:40  | Put an Emphasis on the Enthesis            | 21:00  | Pagets Disease: Is it Gone or Just Hiding? | Victor N. Cassar Pullicino, MD  
|        | Georgina M. Allen, BM                      | 21:00  | Pagets Disease: Is it Gone or Just Hiding? | Victor N. Cassar Pullicino, MD  
| 11:50  | Imaging of Arthritis: The Rheumatologist's Perspective | 22:00  | Pagets Disease: Is it Gone or Just Hiding? | Victor N. Cassar Pullicino, MD  
|        | Veena Dhillon, MA, MD, FRCP                | 22:00  | Pagets Disease: Is it Gone or Just Hiding? | Victor N. Cassar Pullicino, MD  
|
07:00 – 17:30  Registration/Information Desk Hours  13:30 – 15:30  Advanced Imaging Techniques: How I Do It  Moderators:  Christian Glaser, MD  Andoni P. Toms, FRCR, PhD
07:00 – 16:00  Exhibit Hall Hours
07:00 – 08:00  Breakfast
19:00 – 23:00  Annual Gala

08:00 – 15:30  BREAKOUTS: CONCURRENT SESSIONS

08:00 – 10:00  SESSION A:  SPORTS MEDICINE IMAGING – PENTLAND
   08:00 – 10:00  Ankle and Foot  Moderators:  Xavier Demondion, MD  Johnny U.V. Monu, MD
      ? 08:00 – 08:15  Imaging Techniques  Johnny U.V. Monu, MD
      ? 08:15 – 08:30  Ligaments and Instability  Mario Maas, MD
      ? 08:30 – 08:45  Osteochondral Abnormalities  Avneesh Chhabra, MD
      ? 08:45 – 09:00  Heel Pain  David A. Rubin, MD
09:00 – 09:15  Neuropathies  Zehava S. Rosenberg, MD
09:15 – 09:30  Flatfoot Deformity  Carolyn M. Sofka, MD
09:30 – 09:45  Peroneal Tendon Pathology  Xavier Demondion, MD
09:45 – 10:00  Turf Toe and Plantar Plate Injuries  Hilary R. Umans, MD
10:00 – 10:30  Break
10:30 – 12:15  Hot Topic: Injectables  Moderators:  Theodore T. Miller, MD, FACR  Martin Torriani, MD, MSc
10:30 – 10:50  PRP: An Overview  Jon A. Jacobson, MD
10:50 – 11:10  Corticosteroids: Uses and Complications  Corrie M. Yablon, MD
11:10 – 11:25  Prolotherapy and Sclerosing Agents  Robert S.D. Campbell, MD
11:25 – 11:40  Do We Need to Inject Anything at All?: Fenestration and Tendon Stripping  Philip J. O’Connor, MD
11:40 – 12:00  Botox: More Than Just a Pretty Face  Martin Torriani, MD, MSc
12:00 – 12:15  Questions and Answers
12:15 – 13:30  Lunch
**SESSION B:**  
**MUSCULOSKELETAL DISEASE – SIDLAW**

**08:00 – 10:00**  
**Cartilage**  
Moderators:  
Thomas M. Link, MD  
Michael P. Recht, MD

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<td>08:00</td>
<td>Cartilage</td>
<td>Anatomy and Conventional MR Protocols</td>
<td>Richard Kijowski, MD</td>
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<td>08:20</td>
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<td>Advanced Cartilage Techniques: What Are They and Do They Really Help?</td>
<td>Michael P. Recht, MD</td>
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<td>08:45</td>
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<td>Cartilage Injury: How Do I Describe it?</td>
<td>Alice Ha, MD, MS</td>
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<td>09:10</td>
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<td>Cartilage Injury: How is it Repaired?</td>
<td>John Skinner, MBBS, FRCS</td>
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<td>09:35</td>
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<td>Imaging of Cartilage Repair: What to Look For</td>
<td>Thomas M. Link, MD</td>
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<td>10:00</td>
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<td>Break</td>
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<tr>
<td>10:30</td>
<td>Axial Trauma</td>
<td>Pelvis and Acetabular Fractures: How Do I Describe Them?</td>
<td>Leon Lenchik, MD</td>
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**08:00 – 08:20**  
**Anatomy and Conventional MR Protocols**  
Richard Kijowski, MD

**08:20 – 08:45**  
**Advanced Cartilage Techniques: What Are They and Do They Really Help?**  
Michael P. Recht, MD

**08:45 – 09:10**  
**Cartilage Injury: How Do I Describe it?**  
Alice Ha, MD, MS

**09:10 – 09:35**  
**Cartilage Injury: How is it Repaired?**  
John Skinner, MBBS, FRCS

**09:35 – 10:00**  
**Imaging of Cartilage Repair: What to Look For**  
Thomas M. Link, MD

**10:00 – 10:30**  
**Break**

**10:30 – 12:15**  
**Axial Trauma**  
Moderators:  
Wilfred C.G. Peh, MD  
Prudencia Tyrrell, MD

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<tr>
<td>10:30</td>
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<td>Pediatric Spine and Pelvis Injuries</td>
<td>Robert S.D. Campbell, MD</td>
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<tr>
<td>10:50</td>
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<td>Cervical Spine Trauma: Are Radiographs Enough?</td>
<td>Prudencia Tyrrell, MD</td>
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<td>11:10</td>
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<td>MRI of Cervical Ligament Injury</td>
<td>Wilfred C.G. Peh, MD</td>
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<td>Compression Fractures: Can We Distinguish Benign from Malignant?</td>
<td>Mark J. Kransdorf, MD</td>
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<td>11:50</td>
<td>Spine and Peripheral Nerves</td>
<td>Neurography: How to Do it and What Does it Show</td>
<td>Avneesh Chhabra, MD</td>
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<td>12:15</td>
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<td>Imaging the Brachial Plexus: Protocols and Findings</td>
<td>Anne Cotten, MD</td>
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<td>Spine Infection and its Mimickers</td>
<td>David J. Wilson, MD</td>
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<td>14:00</td>
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<td>Spinal Instrumentation: Why is it There and How Do I Describe it?</td>
<td>Richard J. Hughes, MD</td>
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<td>14:30</td>
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<td>What's New in Percutaneous Spine Intervention</td>
<td>Douglas P. Beall, MD</td>
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<td>15:00</td>
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<td>Film Quiz Panel</td>
<td>Donald L. Resnick, MD</td>
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**13:30 – 15:30**  
**Axial Trauma**  
Moderators:  
Wilfred C.G. Peh, MD  
Prudencia Tyrrell, MD

**10:30 – 10:50**  
**Pediatric Spine and Pelvis Injuries**  
Robert S.D. Campbell, MD

**10:50 – 11:10**  
**Cervical Spine Trauma: Are Radiographs Enough?**  
Prudencia Tyrrell, MD

**11:10 – 11:30**  
**MRI of Cervical Ligament Injury**  
Wilfred C.G. Peh, MD

**11:30 – 11:50**  
**Compression Fractures: Can We Distinguish Benign from Malignant?**  
Mark J. Kransdorf, MD

**11:50 – 12:15**  
**Pelvis and Acetabular Fractures: How Do I Describe Them?**  
Leon Lenchik, MD

**12:15 – 13:30**  
**Lunch**

**13:30 – 15:30**  
**Spine and Peripheral Nerves**  
Moderators:  
Douglas P. Beall, MD  
Prudencia Tyrrell, MD

**14:00 – 14:30**  
**Spine Infection and its Mimickers**  
David J. Wilson, MD

**14:30 – 14:50**  
**Spinal Instrumentation: Why is it There and How Do I Describe it?**  
Richard J. Hughes, MD

**14:50 – 15:10**  
**Pediatric Scoliosis: The Surgeon’s Perspective On Treatment**  
Christopher Adams, MB, ChB, FRCS

**15:10 – 15:30**  
**What's New in Percutaneous Spine Intervention**  
Douglas P. Beall, MD

**15:30 – 16:00**  
**Break**

**16:00 – 17:30**  
**Film Quiz Panel**  
Moderator:  
Donald L. Resnick, MD  
*(Combined with Session A in Pentland)*
REGISTRATION/INFORMATION DESK HOURS

Location: Strathblane Hall

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<td>Thursday, October 16th</td>
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<td>Friday, October 17th</td>
<td>07:00 – 17:30</td>
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<tr>
<td>Saturday, October 18th</td>
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SPEAKER PREVIEW ROOM HOURS

Location: Soutra

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EXHIBIT HALL

Location: Strathblane Hall

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ePOSTER HOURS

Location: Strathblane Hall

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LANGUAGE

The official language of the ISS is English. No translation will be provided for Annual Assembly Sessions.

BADGES AND SECURITY

All delegates and accompanying persons will receive a distinctive badge upon registration. It is mandatory that participants wear their registration identity badges at all times when in the conference venue. Similarly, it is also necessary that the identity badges be worn to all functions outside the venue, such as social events.

ACCOMPANYING PERSON

Accompanying persons are not eligible to attend the ISS meetings.

LIABILITY DISCLAIMER

- The ISS and the Meeting Organizing Committee shall not be held responsible for personal accidents, illness, losses or damage to private property. Delegates are advised to arrange their personal insurance for the duration of the Members’ Meeting, the 41st Annual Musculoskeletal Imaging: Fundamentals to Advanced Concepts and booked tours.

- While every attempt will be made to ensure that all aspects of the Members’ Meeting and 41st Annual Musculoskeletal Imaging: Fundamentals to Advanced Concepts mentioned in this announcement will take place as scheduled, the Meeting Organizing Committee reserves the right to make last minute changes without prior notice, should the need arise.

- We reserve the right to modify these terms and conditions at any time and without notice to you or any of its users. We may add to, change, delete or end your use of the service at any time.

- The Meeting Organizing Committee is not responsible for any personal expenses incurred or any loss suffered by any delegate or his/her guest in connection with the event.
THURSDAY, OCTOBER 16, 2014
Welcome Reception (ALL REGISTERED ATTENDEES WELCOME)
Time: 18:30 – 20:30
Location: Edinburgh Castle
Attire: Business Casual (outdoor event – please dress for the weather; note: wear shoes appropriate for cobblestone streets)
Cost: Two tickets included in registration fee. Additional guest tickets are $50 each.

SATURDAY, OCTOBER 18, 2014
Annual Gala (PRE-REGISTRATION REQUIRED)
Time: 19:00 – 23:00
Location: Signet Library
Attire: Formal (Coat and Tie)
Cost: Not included in registration fee. $100 per registrant/guest.
Edinburgh is rich in history and culture, which dates back to the 18th century. Scotland’s capital has cobbled streets, beautiful architecture and unique shops for its visitors and those who call it home. Explore Edinburgh Castle, the city’s most iconic attraction that sits on volcanic rock atop the Royal Mile. This castle was home to many of Scotland’s kings and queens and is home to the Royal Palace and the Crown Room where the Scottish Crown Jewels are stored. Though Edinburgh still has many of its old buildings, it also contains modern architecture creating a mix of past and present as you explore this timeless city.

QUICK FACTS

Time: BST (UTC + 1 hour)
Weights and Measurements: Metric
Telephone Country Code: +44
Emergency/Police Phone Number: 999
Directory Assistance Phone Number: 411
Currency: British Pounds (GBP)
Tipping: 10 – 15%
What to Bring: Comfortable walking shoes.
THANK YOU TO OUR 2014 ISS IN-KIND SUPPORTERS

GE Healthcare - 5 Ultrasound Machines
Leica Microsystems - 12 Microscopes
Siemens - 5 Ultrasound Machines

THANK YOU TO OUR 2014 ISS MUSCULOSKELETAL IMAGING UPDATE COURSE EXHIBITORS

AprioMed AB
BioMarin Europe
GE Healthcare
MEDICA Reporting Limited
MRI-Publisher
Siemens
THANK YOU TO OUR PROMOTIONAL PARTNERS

Gold Level
GE Healthcare
Siemens