The International Skeletal Society in Joint Sponsorship with The International Institute For Continuing Medical Education, Inc. presents

The International Skeletal Society 30TH Annual Refresher Course Diagnosis and Management of Musculoskeletal Disorders September 17–20, 2003

The Fairmont Hotel
San Francisco, California

Refresher Course Chairman
Harry K. Genant, MD

Co-Chairs
James Johnston, MD
Jay Mall, MD
Lynne Steinbach, MD

Refresher Course Committee
Javier Beltran, MD
Byron Gilliam Brogdon, MD
Peter Bullough, MD
Victor Cassar-Pullicino, MD
A. Mark Davies, MD
Herwig Imhof, MD
Jean-Denis Laredo, MD
Iain McCall, MD
Eugene McNally, MD
William Palmer, MD
Wilfred Peh, MD
Maximilian Reiser, MD
Mark Schweitzer, MD
<table>
<thead>
<tr>
<th>Name</th>
<th>Location</th>
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<tbody>
<tr>
<td>Ibrahim F. Abdelwahab, MD</td>
<td>Forest Hills, NY, USA</td>
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<tr>
<td>Judith E. Adams, MD</td>
<td>Manchester, United Kingdom</td>
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<tr>
<td>Claus-Peter Adler, MD</td>
<td>Freiburg, Germany</td>
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<td>Ronald S. Adler, PhD, MD</td>
<td>New York, NY, USA</td>
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<td>Jock Anderson, MD</td>
<td>Sydney, Australia</td>
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<td>Mark W. Anderson, MD</td>
<td>Charlottesville, VA, USA</td>
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<td>Francisco Aparisi-Rodriguez, MD, PhD</td>
<td>Valencia, Spain</td>
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<td>E. Remide Arkun, MD</td>
<td>Izmir, Turkey</td>
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<td>K. Gunnar Astrom, MD</td>
<td>Uppsala, Sweden</td>
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<td>E. Michel Azouz, MD</td>
<td>Miami, FL, USA</td>
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<td>Christopher Beaulieu, MD</td>
<td>Palo Alto, CA, USA</td>
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<td>Ian Beggs, MD</td>
<td>Edinburgh, United Kingdom</td>
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<td>Javier Beltran, MD</td>
<td>Brooklyn, NY, USA</td>
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<td>Jenny T. Bencardino, MD</td>
<td>New York, NY, USA</td>
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<td>Thomas H. Berquist, MD, FACR</td>
<td>Jacksonville, FL, USA</td>
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<td>Marcia F. Blacksin, MD</td>
<td>Newark, NJ, USA</td>
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<td>Klaus Boehndorf, MD</td>
<td>Augsburg, Germany</td>
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<td>Akbar Bonakdarpour, MD</td>
<td>Philadelphia, PA, USA</td>
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<td>Robert Downey Boutin, MD</td>
<td>Davis, CA, USA</td>
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<td>Nathalie J. Bureau, MD</td>
<td>Montreal, Quebec, Canada</td>
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<tr>
<td>Victor N. Cassar-Pullicino, MD</td>
<td>Oswestry, Shropshire United Kingdom</td>
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<td>Alain Chevrot, MD</td>
<td>Paris, France</td>
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<td>Felix Sze-Kway Chew, MD</td>
<td>Winston-Salem, NC, USA</td>
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<td>Christine Chung, MD</td>
<td>La Jolla, CA, USA</td>
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<td>Anne Cotten, MD</td>
<td>Lille, France</td>
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<td>John V. Crues III, MD</td>
<td>Los Angeles, CA, USA</td>
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<td>Richard H. Daffner, MD</td>
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<td>Murray K. Dalinka, MD</td>
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<td>A. Mark Davies, MD</td>
<td>Birmingham, United Kingdom</td>
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<td>Arthur A. de Smet, MD</td>
<td>Madison, WI, USA</td>
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<td>Elizabeth Dion, MD</td>
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<td>Jean Luc Drape, MD</td>
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<td>Neils Egund, MD</td>
<td>Aarhus, Denmark</td>
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<td>Shigeru Ebara, MD</td>
<td>Morioka, Japan</td>
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<td>George Y. El-Khoury, MD</td>
<td>Iowa City, IA, USA</td>
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<td>Rainer Erlemann, MD</td>
<td>Duisburg, Germany</td>
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<td>Frieda Feldman, MD, FACR</td>
<td>New York, NY, USA</td>
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<td>John Feller, MD</td>
<td>Palm Springs, CA, USA</td>
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<td>Bruno Fornage, MD</td>
<td>Houston, TX, USA</td>
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<td>Deborah Forrester, MD</td>
<td>Malibu, CA, USA</td>
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<td>Lawrence Friedman, MD</td>
<td>Ontario, Canada</td>
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<td>Russell C. Fritz, MD</td>
<td>Eugenebrae, CA, USA</td>
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<td>Jean Garcia, MD</td>
<td>Geneva, Switzerland</td>
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<td>Harry K. Genant, MD</td>
<td>San Francisco, CA, USA</td>
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<td>Louis A. Gilula, MD</td>
<td>St. Louis, MO, USA</td>
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<td>Stephan Grampp, MD</td>
<td>Vienna, Austria</td>
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<td>George B. Greenfield, MD</td>
<td>Tampa, FL, USA</td>
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<td>Adam Greenspan, MD</td>
<td>Sacramento, CA, USA</td>
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<td>Harry J. Griffiths, MD, FACR</td>
<td>Jacksonville, FL, USA</td>
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<td>Giuseppe Guglielmi, MD</td>
<td>Andria (BA), Italy</td>
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<td>John H. Harris, Jr, MD, DSc, FACR</td>
<td>FRACR (Hon), Sedona, AZ, USA</td>
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Participating Faculty

Clyde A. Helms, MD
Durham, NC, USA

David Karasick, MD
Philadelphia, PA, USA

Gerwin M. Lingg, MD
Bad Kreuznach, Germany

George Hermann, MD
Forest Hills, NY, USA

Jeremy J. Kaye, MD
Nashville, TN, USA

Thomas Link, MD
Munich, Germany

Herwig Imhof, MD
Vienna, Austria

Paul K. Kleinman, MD
Worcester, MA, USA

Soroosh Mahboubi, MD, FACP
Philadelphia, PA, USA

Jon A. Jacobson, MD
Ann Arbor, MI, USA

Josef Kramer, MD
Linz, Austria

Nancy Major, MD
Durham, NC, USA

Suphaneeewan Jaovisidha, MD
Bangkok, Thailand

Mark J. Kransdorf, MD
Jacksonville, FL, USA

Gerald A. Mandell, MD
Paradise Valley, AZ, USA

Vladimir Jevtic, MD, PhD
Ljubljana, Slovenia

Philipp Lang, MD
Boston, MA, USA

Roman Marciniak, MD
Wrocław, Poland

James O. Johnston, MD
San Francisco, CA, USA

Jean-Denis Laredo, MD
Paris, France

Salutario Martinez, MD
Durham, NC, USA

Anne G. Jurik, MD
Aarhus, Denmark

Leon Lenchik, MD
Winston-Salem, NC, USA

Iain W. McCall, FRCP
Shrewsbury, United Kingdom
Program

Day 1

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7:00-8:00

Registration, Coffee and Pastries

8:00

Welcome
Iain W. McCall and Harry K. Genant

8:10-9:30

Session 1: General Concepts in Musculoskeletal MRI
Moderators: Donald Resnick and Lynne S. Steinbach

8:10

Technical Considerations in Musculoskeletal MRI
Mini N. Pathria

8:30

Direct MR Arthrography of Joints
Lynne S. Steinbach

8:50

Indirect MR Arthrography
Mark E. Schweitzer

9:10

Bone and Cartilage Injury: Principles and MR Imaging
Donald Resnick

9:30-10:00

Refreshment Break

10:00-11:20

Session 2: Elbow, Wrist, Hand
Moderators: Christine Chung and Marco Zanetti

10:00

Medial Elbow Pain
Nancy Major

10:20

Wrist Abnormalities: Pitfalls and Normal Variants
Marco Zanetti

10:40

MR Imaging of Finger Pathology
Christine Chung

11:00

MR Angiography of the Hand
Jean-Luc Drape

11:20-12:20

FOUNDERS LECTURE

11:20

Introduction
Iain W. McCall

11:30

Founders Lecture: Vertebroplasty
Louis A. Gilula

12:10

Presentation Ceremony to Dr. Michael Kyriakos

12:20-14:00

Lunch Break – on your own
### Day 1

<table>
<thead>
<tr>
<th>Time</th>
<th>Session 3A: Shoulder MRI</th>
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<tr>
<td>14:00-15:40</td>
<td>Moderators: Javier Beltran and Michael J. Tuite</td>
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**Shoulder MR: Impingement**

Thomas L. Pope, Jr.

**SLAP Lesions: MRI Findings**

Javier Beltran

**The ABER Position**

John Feller

**MR Arthrography vs Conventional MR of the Glenoid Labrum**

Michael J. Tuite

**MRI of the Post-Op Shoulder**

Michael B. Zlatkin

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<tr>
<th>Time</th>
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<tr>
<th>Time</th>
<th>Session 3B: Infection</th>
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<td>14:00-15:40</td>
<td>Moderators: Deborah Forrester and Maer Ozonoff</td>
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**Musculoskeletal Tuberculosis 2003**

Deborah Forrester

**Atypical Presentations of Tuberculosis**

Ibrahim F. Abdelwahab

**Childhood Osteomyelitis**

Maer Ozonoff

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<tr>
<th>Time</th>
<th>Soft Tissue Infections</th>
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**Spinal Infection: Imaging in Diagnosis and Follow-Up**

Elizabeth Dion

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<th>Time</th>
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<th>Time</th>
<th>Special Focus Session 4A: Spine Intervention</th>
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<td>16:10-17:50</td>
<td>Moderators: Eugene G. McNally and Jean-Denis Laredo</td>
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**Vertebral Fracture, Assessment and Management**

Harry K. Genant

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<tr>
<th>Time</th>
<th>Complications of Vertebroplasty</th>
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<td>16:30</td>
<td>Jean-Denis Laredo</td>
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<th>Time</th>
<th>Therapeutic Procedures for the Lumbar Spine</th>
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<tr>
<td>16:50</td>
<td>Eugene G. McNally</td>
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</table>
17:10  Therapeutic Procedures for the Cervical Spine  
Alain Chevrot

17:30  Discussion

16:10-17:50  Session 48: Rheumatologic Disorders  
Moderators: Herwig Imhof and Seoung-Oh Yang

16:10  Differential Diagnosis of Erosions in the Hand and Wrist  
George B. Greenfield

16:30  Gout Revisited  
George Hermann

16:50  Osteoarthritis Update  
Herwig Imhof

17:10  The Different Faces of Psoriatic Arthritis and Spondyloarthropathies  
Gerwin M. Lingg

17:30  Adjourn
Coffee and Pastries

**Session 5A: Knee Imaging**

**Moderators:** Clyde A. Helms and Arthur A. De Smet

**Recent Advances in MR of the Knee: Menisci**
Clyde A. Helms

**MRI of the Cruciate Ligaments: New Concepts**
Philip Tirman

**MR of the Postoperative Knee**
Michael P. Recht

**MRI versus MR Arthrography for Postoperative Menisci**
Arthur A. De Smet

**Extensor Mechanism of the Knee**
Neils Egund

**Session 5B: Interventional**

**Moderators:** Louis A. Gilula and Wilfred C.G. Peh

**Osteoid Osteoma Ablation**
Daniel Rosenthal

**Cervical Nerve Root Blocks: Indications and Techniques**
Louis A. Gilula

**Percutaneous Vertebroplasty: Time Efficiency Features**
Douglas K. Smith

**CT-Guided Biopsy of Spinal Lesions**
Wilfred C.G. Peh

**Percutaneous Treatment of Cystic Lesions**
Francisco Aparisi-Rodriguez

**Refreshment Break**

**Session 6A: Upper Extremity Imaging**

**Moderators:** Alain Chevrot and Felix Sze-Kway Chew

**Imaging of Thoracic Outlet Syndrome**
Anne Cotten

**Compartment Syndromes of the Upper Extremity**
Felix Sze-Kway Chew
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<tr>
<th>Time</th>
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<tr>
<td>10:50</td>
<td>MR/Clinical Correlation A-C Joint</td>
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<td>Harry J. Griffiths</td>
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<td>11:10</td>
<td>Sternoclavicular Joint Imaging</td>
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<td>Alain Chevrot</td>
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<td>11:30</td>
<td>The Second Metacarpal as a Mirror of Disease</td>
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<td>Alan E. Oestrelich</td>
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<td>10:10-11:50</td>
<td><strong>Session 6B: Ultrasound: Joints</strong></td>
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<td><strong>Moderators:</strong> Marnix van Holsbeeck and Jon A. Jacobson</td>
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<td>10:10</td>
<td>Shoulder</td>
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<td>Eugene G. McNally</td>
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<td>Elbow</td>
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<td>Jon A. Jacobson</td>
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<td>Hand and Wrist</td>
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<td>Hip</td>
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<td>Marnix van Holsbeeck</td>
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<td>11:30</td>
<td>Foot and Ankle</td>
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<td>David J. Wilson</td>
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<td>11:50-13:30</td>
<td><strong>Lunch Break – on your own</strong></td>
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<tr>
<td>13:30-15:10</td>
<td><strong>Session 7A: Hip, Ankle and Foot</strong></td>
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<td><strong>Moderators:</strong> Cheryl A. Petersilge and Murray K. Dalinka</td>
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<tr>
<td>13:30</td>
<td>MRI of Labral Tears</td>
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<td>Cheryl A. Petersilge</td>
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<td>13:50</td>
<td>Avascular Necrosis of the Hip</td>
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<td>Philipp Lang</td>
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<td>14:10</td>
<td>MRI of the Ankle: Tendons</td>
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<td>Murray K. Dalinka</td>
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<td>14:30</td>
<td>Metatarsalgia: An MRI Differential of Metatarsal and Mid Foot Pain</td>
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<td>Joseph S. Yu</td>
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<td>14:50</td>
<td>Lower Extremity Variants and Pitfalls in the Ankle and Foot</td>
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<td>Marco Zanetti</td>
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<td>13:30-15:10</td>
<td><strong>Session 7B: Osteoporosis</strong></td>
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<td><strong>Moderators:</strong> Harry K. Genant and Judith E. Adams</td>
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<td>13:30</td>
<td>Controversies in Bone Densitometry</td>
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<td>Judith E. Adams</td>
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13:50
Practical Approach to DXA Scan Interpretation
Leon Lenchik

14:10
From Microfractures to Macrofractures
Stephan Grampp

14:30
Analysis of Trabecular Bone Structure on CT
Thomas Link

14:50
Quantitative Ultrasound: Basic and Clinical Research
Giuseppe Guglielmi

15:10-15:40
Refreshment Break

15:40-17:20
Special Focus Session 8A: Sports Imaging
Moderators: William E. Palmer and David W. Stoller

15:40
Selected Sports Injuries of the Wrist, Ankle and Hip
David W. Stoller

16:05
Interventional Sports Medicine
Christopher Beaulieu

16:30
Rotator Cuff Injuries in Athletes
William E. Palmer

16:55
Discussion

15:40-17:20
Session 8B: Soft Tissue Tumors
Moderators: Mark D. Murphey and Dennis J. Stoker

15:40
MR Evaluation of Soft Tissue Masses
Murali Sundaram

16:00
Dynamic Contrast-Enhanced MRI for Evaluation of Soft Tissue Sarcomas
Lorraine G. Shapero

16:20
Non-Neoplastic Tumors of Soft Tissue
Dennis J. Stoker

16:40
MRI of Aggressive Fibromatosis with Pathologic Correlation
E. Remide Arkun

17:00
Imaging of Liposarcoma
Mark D. Murphey

17:20
Adjourn
7:00-8:00
Coffee and Pastries

8:00-10:00
Session 9A: Bone Marrow, Muscle, and Nerve
Moderators: David M. Panicek and Robert D. Boutin
8:00
MRI of Bone Marrow
David M. Panicek
8:20
Pitfalls in the Assessment of Bone Marrow MRI-Metastatic/Hematologic Disease
K. Gunnar Aström
8:40
Diabetic Myonecrosis: Clinical, Histology and Imaging Including MRI and PET
Salutario Martinez
9:00
MRI of Sports-Related Muscle Injury
Robert D. Boutin
9:20
Skeletal Expressions of Neuropathy
Janet McCredie

8:00-10:00
Session 9B: Tumors: General Concepts
Moderator: Murali Sundaram and Mark W. Anderson
8:00
Approach to Imaging of Bone Tumors
Murali Sundaram
8:20
Scintigraphy in Management of Childhood Sarcomas
Gerald A. Mandell
8:40
Complications After Limb-Salvage Surgery
Marcia F. Blacksin
9:00
Biopsy of Bone and Soft Tissue Masses: Anatomic and Surgical Considerations
Mark W. Anderson
9:20
Pseudotumors in Orthopedic Oncology
James O. Johnston
9:40-10:10
Refreshment Break
10:30-12:10
Special Focus Session 10A: Articular Cartilage and Advanced Imaging Techniques
Moderators: Maximillian F. Reiser and Seoung-Oh Yang
10:30
Imaging of Articular Cartilage
Charles G. Peterfy
10:50
MR Diffusion Imaging in Musculoskeletal Disease
Maximillian F. Reiser
11:10
PET Update
Thomas H. Berquist
11:30
Dedicated Extremity MRI
John V. Crues
11:50  Clinical MR Microscopy  
Mamoru Niitsu and Hiroshi Yoshioka

12:10  Discussion

10:30-12:10  
10:30  Session 10B: Tumors  
Moderators: A. Mark Davies and Filip Vanhoenacker

10:50  MRI of Digital Soft Tissue Abnormalities  
Frieda Feldman

11:10  Osteoid Osteoma: Radiologic-Pathologic Correlation  
Mark J. Kransdorf

11:30  Emolization of Bone Metastases: An underutilized technique  
Peter L. Munk

11:50  Sarcomatous Transformation in Fibrous Dysplasia  
Gene P. Siegel

12:10  ABC: Primary and Secondary  
Mark D. Murphey

12:30  Lunch Break - on your own

13:30-15:10  
13:30  Session 11A: Cervical Spine  
Moderators: Iain W. McCall and Richard H. Daffner

13:30  Imaging Degenerative Changes of the Cervical Spine  
Iain W. McCall

13:50  Multislice CT in the Evaluation of Cervical Spine Trauma  
George Y. El-Khoury

14:10  Controversies in Cervical Spine Imaging for Trauma  
Richard H. Daffner

14:30  Cervical Spine Malalignment: Signs and Significance  
John H. Harris

14:50  Minimal Fixed Rotary Distortion: A Late Sequel of Whiplash Injury  
Andreas Niedecker

13:30-15:10  
Session 11B: Trauma and Total Joint Replacement  
Moderators: Jeremy J. Kaye and Roman Marciniak

13:30  Pelvic Trauma  
Anthony J. Wilson

13:50  Stress Fractures: A Multimodality Approach  
Adam Greenspan
### Day 3

<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>14:10</td>
<td>Musculoskeletal Trauma in the Elderly</td>
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<td>Jeremy J. Kaye</td>
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<td>14:30</td>
<td>Imaging of Total Knee Replacement</td>
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<td>Barbara N.W. Weissman</td>
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<td>14:50</td>
<td>Radiographic Evaluation of Total Hip Replacements</td>
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<td>Theodore T. Miller</td>
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<td>15:10-15:40</td>
<td>Refreshment Break</td>
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<td>15:40-17:00</td>
<td>Session 12A: Hematologic and Metabolic</td>
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<td>Moderators: Michael J. Pitt and Victor N. Cassar-Pullicino</td>
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<td>Renal Osteodystrophy</td>
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<td>16:00</td>
<td>The Spine in Paget Disease</td>
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<td>Victor N. Cassar-Pullicino</td>
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<td>16:20</td>
<td>Ricketic and Osteomalacic Disorders</td>
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<td>Michael J. Pitt</td>
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<td>16:40</td>
<td>Bone Imaging in Sickle Cell Disease</td>
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<td>John C. Odita</td>
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<td>17:00</td>
<td>Pathologic Principles of Metabolic and Joint Disease</td>
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<td>Claus-Peter Adler</td>
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<td>15:40-17:00</td>
<td>Session 12B: Malignant Osseous Tumors</td>
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<td>Moderators: Daniel Vanel and Michael E. Mulligan</td>
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<td>15:40</td>
<td>Imaging Techniques Useful for the Diagnosis and Staging of Myeloma</td>
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<td>Michael E. Mulligan</td>
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<td>16:00</td>
<td>Malignant Surface Tumors of Bone</td>
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<td>Daniel Vanel</td>
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<td>16:20</td>
<td>Osteosarcoma in Patients Older than 40 Years</td>
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<td>Yoshinao Oda</td>
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<td>16:40</td>
<td>Adult T-Cell Leukemia/Lymphoma</td>
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<td>Shigeru Ehara</td>
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<td>17:00</td>
<td>Analysis of Periosteal Reactions for the Differential Diagnosis of Bone Disorders</td>
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<td>Ranier Erlemann</td>
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<td>Adjourn</td>
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<td>19:00-22:00</td>
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Program

Day 4

7:00-8:00
Coffee and Pastries

8:00-9:40
Session 13A: Pediatric
Moderators: Paul K. Kleinman and E. Michel Azouz

8:00
Child Abuse-Diagnostic Dilemmas
Paul K. Kleinman

8:20
Radiology of Pediatric Elbow Trauma
Richard M. Shore

8:40
MRI of Juvenile Arthritis and Enthesitis
E. Michel Azouz

9:00
Imaging of Foot Lesions in Children
Soroosh Mahboubi

9:20
MRI of Inflammatory Conditions of the Muscles in Children
Kamaldine Oudjiane

8:00-9:40
Session 13B: Rheumatologic Disorders
Moderators: Klaus Bohndorf and Charles S. Resnik

8:00
MRI in Rheumatoid Arthritis
Klaus Bohndorf

8:20
Imaging of the Rheumatoid Cervical Spine
David Karasick

8:40
Crystal Deposition Diseases
Charles S. Resnik

9:00
Imaging of Hemophilia
Suphaneewan Jaovisidha

9:20
Imaging of the Sacroiliac Joints with Emphasis on MRI
Anne G. Jurik

9:40-10:10
Refreshment Break

10:10-11:30
Special Focus Session 14A: Spine
Moderators: Lee F. Rogers and Josef Kramer

10:10
Spinal Instrumentation and Fusion
Josef Kramer

10:30
Role of MRI in the Assessment of Acute Skeletal Trauma
Lee F. Rogers

10:50
MRI of the Postoperative Spine
Jeremy W.R. Young
Program

Day 4

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| 11:10 | Variants, Artifacts and Pitfalls in Spine Imaging  
        Jamshid Tehrnazadeh |
| 11:30 | Calcified Cervical Intervertebral Disk in Children: Radiological Findings  
        Vladimir Jevtic |
| 10:10-11:30 | **Session 14B: Ultrasound**  
            **Moderators:** Ronald S. Adler and Ian Beggs |
| 10:10 | Ultrasound Guided Interventions in the MSK  
        Ronald S. Adler |
| 10:30 | Ultrasound of Soft Tissue Masses  
        Ian Beggs |
| 10:50 | Ultrasound of “Snapping Syndromes” of the MSK System  
        Nathalie J. Bureau |
| 11:10 | Shoulder Dynamics  
        Marnix van Holsbeeck |
| 11:30 | Ligaments and TFCC of the Wrist: MRI and Ultrasound Correlation  
        Lawrence Friedman |
| 11:50 | Adjourn |