

45th Annual Meeting

# MUSCULOSKELETAL IMAGING COURSE

# September 26-28, 2018

# **COURSE HIGHLIGHTS**

- Case-Based Interactive Audience Response Sessions
- 4 Self-Assessment Module Offerings
- Recommendations for MSK Dilemmas
- Hot Topics in Musculoskeletal Imaging
- Orthopedic Pathology Course
- Musculoskeletal Ultrasound Course



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# **YOU ARE INVITED**

The International Skeletal Society (ISS) invites you to its 45th annual refresher course in Musculoskeletal Radiology. The program is exceptional on numerous counts. All aspects of MSK radiology are covered over three days. The speakers are international experts who have literally written the books on MSK MRI, CT, ultrasound and radiography.

Parallel tracks give participants the option of attending lectures focusing on either sports medicine or other MSK disorders such as neoplasm, infection, arthritis and metabolic disease. In the sports track, lectures emphasize the current thinking about anatomy, physiology and traumatic mechanisms of injury. The program is designed for depth of knowledge. In the MSK disorders track, speakers will address hot topics including bone marrow, peripheral nerves, orthopedic hardware and cartilage. Interventional topics encompass injections, percutaneous treatments and biopsy techniques comparing ultrasound, CT and fluoroscopic guidance.

Here are some highlights:

- Opening session on bone marrow imaging with histopathological correlation
- MSK imaging dilemmas with evidence-based recommendations
- ISS meets DGMSR: imaging of the shoulder
- Self-assessment modules (SAM)
- Interactive audience response sessions (ARS)
- Sports-specific injuries involving joints and muscles
- Rapid-fire presentations on bone and soft tissue tumors
- Traditional film quiz panel

Several optional courses are available. The one-day MSK ultrasound course takes place on Tuesday. Space is limited for the small group tutorials in which participants can scan models under the supervision of experienced tutors. The one-day radiology-pathology correlation course happens on Sunday. Participants in this pathology course are welcome to join ISS members for case presentations during the Members Meeting on Monday and Tuesday.

In 2018, the ISS refresher course will take place in Berlin at the InterContinental Hotel. The InterCon is recently updated and well located in the Tiergarten district of Berlin, minutes from the Zoo, KaDeWe and Bikini Berlin. Berlin is Germany's largest city and its capital since the reunification of East and West Germany in 1990. Most importantly, Berlin is an extraordinarily vibrant, profoundly historical and cutting-edge cultural city.

### We hope you will join us in Berlin.

William Palmer ISS President *Laura Bancroft* Chair, Program Committee Andreas Heuck Chair, Local Organizing Committee

Berlin, the German capital, is renowned for its exceptional variety of attractions, its flourishing cultural scene and a way of life that's both fast-paced and relaxed. Contrasts between historical buildings and modern architecture, between the traditional and the modern are what set the city apart from the rest. The sights of Berlin – from the Brandenburg Gate to the Federal Chancellery – tell the story of an entire nation.



### MUSCULOSKELETAL IMAGING COURSE EDUCATIONAL NEEDS

### **OVERALL MEETING DESIGN**

During this six-day meeting, all attendees are welcome to register for the three-day refresher course, our main educational activity. All attendees can also register for our one-day Pathology Orthopedic Course and Hands-On Ultrasound Course. The Members Meeting, our two-day scientific program, is open to ISS members. The multiple sessions are designed to meet the needs of the multi-disciplinary physicians attending the course. The course focus is targeted towards, pathologists, radiologists, researchers, sonographers, allied health providers and other professionals interested in musculoskeletal imaging.

### **EDUCATIONAL NEEDS**

Musculoskeletal imaging involves a broad spectrum of pathology including sports related injuries, trauma, arthritis, infection, osseous and soft tissue tumors, and metabolic bone disease. The diagnosis and management of musculoskeletal disorders increasingly relies upon advanced imaging. Further, image guided biopsy and therapeutic interventions play an important role in the management of musculoskeletal disorders. Given these demands, musculoskeletal imagers require ongoing education to maintain an extensive knowledge base, be skilled in state-of-the-art imaging techniques, and understand the latest advances in clinical management.

The refresher course is structured to fully address the educational needs of musculoskeletal imagers. Two parallel tracks in sports medicine imaging and musculoskeletal imaging provide attendees a wide selection of activities to fulfill their individual educational needs. Educational sessions within each track concentrate on specific pathology and anatomic regions. Conventional didactic lectures are supplemented by highly focused "rapid fire" sessions to maximize the educational yield for participants. To facilitate integration of educational material into clinical practice, attendees are encouraged to participate in case interpretation sessions. Interactive events include a film interpretation panel and an innovative "at the PACS" session combining real-time interpretation with didactic materials.

The sports medicine imaging track includes topics reviewing anatomy and pathology of the shoulder, elbow, wrist, hip, knee, ankle and foot. Rapid fire sessions focus on sites of complex anatomy and specific injuries. Special sessions addressing tendon, cartilage, bone and muscle emphasize the evaluation of musculoskeletal structural substrates, affording an in depth exploration of biomechanics, pathophysiology, and advanced imaging. Attendees are assured of an expansive educational experience with offerings that include tendon histopathology, advanced cartilage imaging, pediatric sports injuries, postoperative imaging, and numerous specific sports related injuries. The musculoskeletal disease track covers a broader array of pathology, acting as both a comprehensive review and update on recent advances. Common musculoskeletal findings are discussed in an introductory "differential and diagnosis" session, with subsequent sessions on trauma, bone and soft tissue tumors, metabolic bone disease and arthritis. Additional sessions address disorders of the spine and peripheral nerves, imaging of orthopedic hardware, and musculoskeletal therapeutic interventions. Advanced imaging techniques are discussed using the popular rapid fire format, including whole body MRI, dual energy CT and metal artifact reduction methods.

The primary goal of the refresher course is to provide a rich educational experience for attendees. The wide variety of educational sessions allows participants to remedy educational gaps, regardless of experience or scope of practice. Attendees of the course can expect to gain in depth knowledge of common clinical entities and exposure to uncommon disorders, while also learning of the latest innovations in advanced imaging and therapeutic interventions.

### **EDUCATIONAL OBJECTIVES**

At the conclusion of the ISS 45th Annual Meeting and Musculoskeletal Imaging Course, attendees should be able to:

- 1. Explain the pathophysiology and imaging findings of commonly encountered musculoskeletal disorders and sports related injuries.
- 2. Identify appropriate utilization of radiographs, CT, MRI and ultrasound for evaluating musculoskeletal disorders.

### ULTRASOUND AND GUIDED INTERVENTION: MUSCLE, NERVE AND FAT

The need for the hands-on ultrasound workshop and lectures has been established from discussions with the ISS program committee, the feedback from past ISS program committee, the feedback from past ISS program committee and past ISS hands-on workshops, and faculty participation in other similar hands-on ultrasound workshops across the world. The topic chosen for this year's course is ultrasound of Muscle, Nerve and Fat. In addition to didactic lectures, the attendees will participate in hands-on scanning tutorials, allowing the delegates to work in small groups with experts to practice their scanning of muscles, nerves, and fat.

### ACCREDITATION

Please visit the website for CME and Sonographer accreditation updates: www.internatonalskeletalsociety.com

# MUSCULOSKELETAL

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# **MUSCULOSKELETAL IMAGING COURSE FACULTY**

Ronald Adler, MD, PhD Georgina Allen, FRCR, MScSEM Nicolas Amoretti, MD Mark Anderson, MD Suzanne Anderson, MD, PhD Gustav Andreisek, MD, MBA E. Remide Arkun, MD Laura Bancroft, MD, FACR Antonio Barile, MD Andrea Baur-Melnyk, MD Alberto Bazzocchi, MD, PhD Francesca D. Beaman, MD lan Beggs, FRCPE, FRCR Jenny Bencardino, MD D. Lee Bennett, MD, MA, MBA Donna Blankenbaker, MD Klaus Bohndorf, MD S. Fiona Bonar, MB, FRCPath, FRCPA Marcelo Bordalo-Rodrigues MD, PhD Robert Boutin, MD Miriam Bredella, MD Earl W. Brien, MD Kenneth Buckwalter, MD, MS, MBA Charles Bush, MD Robert Campbell, MD John Carrino, MD, MPH Victor Cassar-Pullicino, MD Nancy Chauvin, MD Avneesh, Chhabra, MD Jung-Ah Choi, MD Hema Choudur, MBBS, FRCPC Christine Chung, MD Anne Cotten, MD Joseph Craig, MB, ChB Michel Crema, MD Julia Crim, MD John Crues, MD, MS Marcelo De Abreu. MD Michael Dienst, MD Tobias Dietrich, MD

Hassan Douis MD, MRCP, FRCR Jean Luc Drape, MD Neils Egund, MD, DMSc Rainer Erlemann, MD Julie Fanburg-Smith, MD Laura Fayad, MD David Fessel, MD Bruce Forster, MD, MSc, FRCPC Anastasia Fotiadou, MD, PhD Karl-Friedrich Kreitner, MD Jan Fritz, MD Howard Galloway, FRANZCR Christian Glaser, MD Garry Gold, MD Andrew Grainger, BM, BS, MRCP, FRCR James Griffith, MB, BCh, BAO, MD Ali Guermazi, MD, PhD Giuseppe Guglielmi, MD Soterios Gyftopolous, MD Alice Ha, MD, MS George Hermann, MD Andreas Heuck, MD Mary Hochman, MD Benjamin Howe, MD Tudor Hughes, FRCR Hakan Ilaslan, MD Jon Jacobson, MD Steven James, MB, ChB, FRCR Suphaneewan Jaovisidha, MD Anne Jurik, DMSc Richard Kijowski, MD Hee Kyung Kim, MD Andrea Klauser, MD Josef Kramer, MD Mark J. Kransdorf, MD Radhesh Lalam, MBBS, MRCS, FRCR Robert Lambert, MB, FRCPC Jean-Denis Laredo, MD Thomas LeCorroller, MD, PhD Frederic LeCouvet, MD

Kenneth Lee, MD Leon Lenchik. MD Thomas Link, MD, PhD James Linklater, MBBS David M. Panicek, MD Mario Maas, MD, PhD Nancy Major, MD Ramv Mansour, MD Carlo Martinoli, MD Eugene McNally, MD Theodore Miller, MD, FACR Johnny Monu, MB, BS, MS Antoine Moraux, MD Carol D. Morris, MD, MS Kambiz Motamedi, MD Michael E. Mulligan, MD Peter Munk, MDCM, FRCPC, FSIR Mark Murphey, MD Iris-Melanie Noebauer-Huhmann, MD Philip O'Connor, MD Paul O'Donnell, MBBS, FRCP, FRCR Patrick Omoumi, MD, PhD Simon Ostlere, FRCR Huque Ouellette, MD William Palmer, MD Mini N. Pathria. MD Wilfred Peh, MD Lionel Pesquer, MD Catherine Petchprapa MD Jeffrey Peterson, MD David Petrover, MD Christian Pfirrmann, MD, MBA Michael Recht, MD Monique Reijnierse, MD, PhD Winston Rennie, MB, MSc(SEM), FRCR Donald Resnick, MD Michael Richardson, MD Philip Robinson, FRCR Frank Roemer, MD

David Rubin, MD Christoph Schaeffeler, MD Rainer Schmitt, MD, PhD Mark Schweitzer, MD Luca Sconfienza, MD, PhD Leanne L. Seeger, MD, FACR Nogah Shabshin, MD, MBA, BSc Marvam Shahabpour, MD Stacy Smith, MD Carolyn Sofka, MD Andrew Sonin, MD, FACR Lynne Steinbach. MD Kathryn Stevens, MD, BS (hons) Naveen Subhas, MD Reto Sutter, MD Mihra Taljanovic, MD, PhD Atul Taneja, MD, PhD James Teh, MBBS, MRCP, FRCR Michael Tuite, MD Prudencia Tyrrell, MD Hilary Umans, MD Marnix Van Holsbeeck, MD Bruno Vande Berg, MD, PhD Daniel Vanel, MD Filip Vanhoenacker, MD, PhD Violeta Vasilevska Nikodinovska MD, PhD, MSc Koenraad Verstraete, MD Hillary W. Garner, MD Simone Waldt, MD Daniel M. Walz, MD Marc-André Weber, MD, MSc Lawrence White. MD David Wilson, FRCP, FRCR Carl Winalski, MD Jim Wu, MD Hiroshi Yoshioka, MD, PhD Marco Zanetti. MD Michael Zlatkin, MD

### **SOCIETY OFFICERS**

**PRESIDENT** William E. Palmer, MD

**PRESIDENT-ELECT** Lawrence White, MD

SECRETARY Juerg Hodler, MD, MBA

**TREASURER** Michael Recht, MD

TREASURER-ELECT Michael Tuite, MD

IMMEDIATE PAST PRESIDENT Lynne Steinbach, MD

### **ISS EXECUTIVE COMMITTEE MEMBERS**

Andrea Rosskopf, MD

### **MEMBERS-AT-LARGE**

M. Fernanda Amary, MD, PhD Dariusz Borys, MD Ricardo K. Kalil, MD Frederic E. Lecouvet, MD G. Petur Nielsen, MD Philip Robinson, FRCR

### **REFRESHER COURSE COMMITTEE CHAIR** Laura Bancroft, MD, FACR

**MEMBERS' MEETING CHAIR** Juile Fanburg-Smith, MD

## CONVENTION PLANNING CHAIR

Lawrence White, MD

### **PROGRAM COMMITTEE**

Laura Bancroft, MD, FACR (Chair) Christine Chung, MD Garry Gold, MD Andrew Grainger, BM, BS, MRCP, FRCR Leon Lenchik, MD Theodore Miller, MD, FACR Mark Murphey, MD Philip O'Connor, MD William Palmer, MD Mini Pathria, MD Michael Recht, MD Philip Robinson, FRCR David Rubin, MD Carolyn Sofka, MD Lawrence White, MD

# **MUSCULOSKELETAL IMAGING COURSE**

7:00 - 8:00

BREAKFAST **REGISTRATION/INFORMATION DESK HOURS**  7:00 - 16:00 **EXHIBIT HALL HOURS** 

7:00 - 17:00

# WEDNESDAY, SEPTEMBER 26, 2018

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**COMBINED SESSION** 

DAY 1

8:00 - 8:10	INTRODUCTION, Laura Bancroft, MD, FACR	8:55 - 9:15	Pediatric Marrow Disorders Nancy Chauvin, MD
8:10 - 10:00	Opening Session: Bone Marrow Moderators: Lawrence White, MD, Michael Tuite, MD	9:15 - 9:35	Bone Marrow Changes in Arthritis, What Are They and Why Do They Matter? <i>Frank Roemer, MD</i>
8:10 - 8:35	Bone Marrow Changes Related to Injury: Anatomy, Pathophysiology, and Terminology <b>Donald Resnick, MD</b>	9:35 - 10:00	Bone Tumors with Prominent Marrow Edema: A Useful Sign in Differential Diagnosis <i>Mark Murphey, MD</i>
8:35 - 8:55	Bone Marrow Histopathology, for Correlation with		

Radiology Julie Fanburg-Smith, MD

### SPORTS MEDICINE IMAGING

SPORTS MEDICINE IMAGING		MUSCULO	OSKELETAL DISEASE
10:00 - 10:30	BREAK	10:00 - 10:30	BREAK
10:30 - 12:00	Hot Topics Moderators: Michael Recht, MD, Patrick Omoumi, MD, PhD	10:30 - 12:00	MSK Intervention Moderators: Nicolas Amoretti, MD, Antonio Barile, MD
10:30 - 10:45	Al and MSK Radiology: What is its Role?	10:30 - 10:45	PRP: What is it Good For? <i>Jon Jacobson, MD</i>
10 45 11.00	Michael Recht, MD		
10:45 - 11:00	New Pulse Sequences in MSK MR: What, When, and Why? Garry Gold, MD	11:00 - 11:15	Can We Treat the Joint? <i>Marnix Van Holsbeeck, MD</i>
11:00 - 11:15	MSK MR Imaging: Have We Gone Overboard with Resolution and Image Quality at the Expense of	11:15 - 11:25	US Guided Percutaneous Treatment for Trigger Finger and Carpal Tunnel Syndrome <i>David Petrover, MD</i>
	Cost and Speed? Naveen Subhas, MD	11:25 - 11:35	Joint and Soft Tissue Injections: US vs Fluoroscopic Guidance Georgina Allen, FRCR, MScSEM
11:15 - 11:30	3D Printing and vr/ar: Do They Have a Role in MSK Imaging? <i>Benjamin Howe, MD</i>	11:35 - 11:45	Spine Procedures: CT vs. Flouro Luca Sconfienza, MD, PhD
11:30 - 11:45	Resurgence of MSK CT <i>Kambiz Motamedi, MD</i>	11:45 - 12:00	
11:45 - 12:00	Will Metal Artifact Reduction, Low Dose and Dual Energy	12:00 13:30	LUNCH
12:00 13:30	Lead to a Resurgence of MSK CT Imaging? <i>Hugue Ouellette, MD</i> LUNCH	13:30 - 15:00	
13:30 - 15:00	Imaging Sports Injury of the Elbow	13:30 - 13:45	
	Moderators: Victor Cassar-Pullicino, MD, Simon Ostlere, FRCR	13:45 - 14:00	Injecting and When? <i>Kenneth Lee, MD</i> Subspecialty MSK Teleradiology: Who Does it Help and Hurt? <i>Andrew Sonin, MD, FACR</i>
13:30 - 13:50	Mechanics and Injury of the Throwers Elbow <i>Mark Anderson, MD</i>	14:00 - 14:15	Early Rheumatoid Arthritis: When to Use MR or US
13:50 - 14:10	Biceps and Triceps, Anatomy and Pathology, Does Knowing the Anatomy Matter? <i>David Fessel, MD</i>	14:15 - 14:30	Andrea Klauser, MD Screening for Osteoporosis: Who to Examine and How?
14:10 - 14:30	Elbow Ligament Anatomy, Injury Patterns and Lesion Visualization <i>Lynne Steinbach, MD</i>	14:30 - 14:45	Wilfred Peh, MD Follow-up After Treatment of Soft Tissue Sarcomas: How
14:30 - 14:45	Epicondylitis, Imaging Guided Diagnosis and Treatment <i>Philip O'Connor, MD</i>	14:45 - 15:00	
14:45 - 15:00	Sports Injury of the Pediatric Elbow Kathryn Stevens, MD, BS (hons)	15:00 - 15:30	Management? <i>Mark Schweitzer, MD</i> BREAK
15:00 - 15:30	BREAK	15:30 - 17:00	Metabolic and Systemic - (SAM)
15:30 - 17:00	Wrist & Hand Sports Injuries: State of the Art Imaging Moderators: Hiroshi Yoshioka, MD, PhD,		Moderators: Anastasia Fotiadou, MD, PhD, Alberto Bazzocchi, MD, PhD
	Jean-Denis Laredo, MD	15:30 - 15:45	· · · · · · · · · · · · · · · · · · ·
15:30 - 15:45	MRI: State of the Art Diagnosis of Sports Injuries Michael Tuite, MD	15:45 – 16:00 16:00 – 16:15	Sarcopenia: Past, Present, and Future <i>Robert Boutin, MD</i> Adiposity: Musculoskeletal Implications
15:45 - 16:00	Ultrasound in Hand and Wrist Sports Diagnosis:		Miriam Bredella, MD
	Advantages, Limitations and Intervention	16:15 - 16:30	,
16:00 - 16:15	James Teh, MBBS, MRCP, FRCR Post-op Hand and Wrist MRI in Sports	16:30 - 16:45	Drug Induced Musculoskeletal Disorders Michael Richardson, MD
	Robert Campbell, MD	16:45 - 17:00	Atypical Infections Johnny Monu, MB, BS, MS
16:15 - 16:30	Sports Specific: Wrist Golf Injuries Bruce Forster, MD, MSc, FRCPC		
16:30 - 16:45	Sports Specific: Hand and Wrist Climbing Injuries Andrea Rosskopf, MD		WELCOME RECEPTION
16:45 - 17:00	Sports Specific: Hand and Wrist Tennis Injuries Jenny Bencardino, MD		18:30 – 20:30

# DAY 2

## THURSDAY, SEPTEMBER 27, 2018

### SPORTS MEDICINE IMAGING

JF OKT J F		MOSCOL	
8:00 - 10:00	Shoulder: ISS Meets DGMSR Moderators: Andreas Heuck, MD, Klaus Bohndorf, MD	8:00 10:00	A N
8:00 - 8:15	Rotator Cuff: Current Concepts in Anatomy and Classification <i>Simone Waldt, MD</i>	8:00 - 8:15 8:15 - 8:30	۲ ۷
8:15 - 8:30	Biceps Pulley and Rotator Interval Rainer Schmitt, MD, PhD	8:30 - 8:45	G V R
8:30 - 8:45	External and Internal Impingement Syndromes Andreas Heuck, MD	8:45 - 9:00	V
8:45 - 9:00 9:00 - 9:15	Shoulder Instability <i>Karl-Friedrich Kreitner, MD</i> Calcific Tendinitis <i>Christian Glaser, MD</i>	9:00 - 9:15	S Ir
9:15 - 9:30	Pectoralis, Latissiumus and Teres Major Marco Zanetti, MD	9:15 - 9:30	C
9:30 - 9:45	Sick Scapula Syndrome, Scapular Impingement and Periscapular Bursitis <b>Christoph Schaeffeler, MD</b>	9:30- 9:45	N is
9:45 - 10:00 <b>10:00 10:30</b>	Post-Operative Shoulder <i>Reto Sutter, MD</i> BREAK	9:45 - 10:00	S J
		10:00 - 10:30	B
10:30 - 12:00	Trauma/Stress Injuries (ARS) Moderators: Howard Galloway, FRANZCR, Michael Zlatkin, MD	10:30 - 12:00	Μ
10.20 - 10.45	Upper Extremity Stress Injuries <i>Lionel Pesquer, MD</i>	10:30 - 10:45	C
	Axial Skeleton Stress Injuries	10:45 - 11:00	N
10:45 - 11:00	Radhesh Lalam, MBBS, MRCS, FRCR	11:00 - 11:15	lr
11:00 - 11:15	Sacral Stress Fractures Mary Hochman, MD	11:15 - 11:30	S
	-	11:30 - 11:45	C
11:15 - 11:30	Hip and Knee Stress Injuries How Did I Break My Hip Running? <i>Mini N. Pathria, MD</i>	11:45 - 12:00 <b>12:00 13:30</b>	C L
11:30 - 11:45	Tibia Stress Injuries in Athletes and Military Recruits <i>Nogah Shabshin, MD, MBA, BSc</i>	13:30 - 15:00	R M F
11:45 - 12:00	Ankle and Foot How Did I Break My Foot Sightseeing in Berlin? <i>Daniel M. Walz, MD</i>	13:30 - 13:40	V T
12:00 13:30	LUNCH	13:40 - 13:50	ŀ
13:30 - 15:00	Muscle Injury, Edema and Beyond Moderators: Atul Taneja, MD, PhD, Mini N. Pathria, MD	13:50 - 14:00	⊦ ∧ B
13:30 - 13:45	Robert Boutin, MD	14:00 - 14:15	R
13:45 - 14:00	Imaging of Muscle Trauma: Role of MR and US <i>Michel Crema, MD</i>	14:15 - 14:30	lr S
14:00 - 14:15	Muscle Injuries of the Hip and Thigh Marc-André Weber, MD, MSc	14:30 - 14:40	L
14:15 - 14:30	Grading of Muscle Injury: Current Concepts Steven James, MB, ChB, FRCR	14:40 - 14:50	J. S
14:30 - 14:45	Skeletal Muscle Imaging in Children <i>Hee Kyung Kim, MD</i>	14:50 - 15:00	L Ir
14:45 - 15:00	Novel Imaging Techniques for Assessment of Muscle <i>Jim Wu, MD</i>	15:00 - 15:30 15:30 - 17:00	B
15:00 - 15:30	BREAK		P
	<b>Core Curriculum: Sports Injuries in the Pelvis &amp; Trunk</b> Moderators: <i>David Rubin, MD, Antoine Moraux, MD</i>	15:30 - 15:40	v S
15:30 - 15:45		15:40 - 15:50	R S
15:45 - 16:00	Acute Athletic Groin Injuries: Flexors and Adductors James Linklater, MBBS	15:50 - 16:00 16:00 - 16:10	V E
16:00 - 16:15	Lateral Pelvic and IT Band Injuries Miriam Bredella, MD	1/10 1:55	H
16:15 - 16:30	Pelvic Apophyseal Injuries Julia Crim, MD	16:10 - 16:20	E
16:30 - 16:45	Nerve Blocks & Injections for Pelvic Sports Injuries Jan Fritz, MD	16:20 - 16:30	ι
16:45 - 17:00	Thoracic & Abdominal Wall Muscle Injuries Outside the Groin <i>Lawrence White, MD</i>	16:30 - 16:40 16:40 - 16:50 16:50 - 17:00	Ir B V

### MUSCULOSKELETAL DISEASE

:00 10:00	Arthritis for Residency and Beyond Moderators: Anne Jurik, DMSc, Neils Egund, MD, DMSc
:00 - 8:15	Hands and Feet Pitfalls for Diagnosis Anne Cotten, MD
:15 - 8:30	What Crystals Do and What They Look Like George Hermann, MD
:30 - 8:45	What Does MRI Tell Us About the Pathophysiology of Rheumatoid Arthritis <i>Monique Reijnierse, MD, PhD</i>
:45 - 9:00	What Does MRI Tell Us About the Pathophysiology of Osteoarthritis <i>Ali Guermazi, MD, PhD</i>
:00 - 9:15	Synovial Masses Presenting as Monoarthritis Iris-Melanie Noebauer-Huhmann, MD
:15 - 9:30	CRMO, SAPHO and SCCH: Unravelling the Rheumatological Alphabet Soup <i>Robert Lambert, MB, FRCPC</i>
:30- 9:45	MRI of the Axial Spine: When is it Spondyloarthritis and When is it Not? <i>Winston Rennie, MB, MSc(SEM), FRCR</i>
:45 - 10:00	Sacroiliac Joint: Degenerative Versus Inflammatory Arthritis Jean-Denis Laredo, MD
0:00 - 10:30	BREAK
0:30 - 12:00	Spine Imaging (SAM) Moderators: David Wilson, FRCP, FRCR, E. Remide Arkun, MD
0:30 - 10:45	CT Spine Imaging Pitfalls Tudor Hughes, FRCR
0:45 - 11:00	MR Spine Imaging Pitfalls Marcelo De Abreu, MD
1:00 - 11:15	Imaging of Spinal Trauma D. Lee Bennett, MD, MA, MBA
1:15 - 11:30	Spine Infection Suphaneewan Jaovisidha, MD
1:30 - 11:45	Osteoporotic Fractures James Griffith, MB, BCh, BAO, MD
1:45 - 12:00	Degenerative Disk Disease <b>Prudencia Tyrrell, MD</b>
2:00 13:30	LUNCH
3:30 - 15:00	Rapid Fire ST Tumors (ARS)
	Moderators: Hassan Douis MD, MRCP, FRCR, Frederic LeCouvet, MD
3:30 - 13:40	What's New from the WHO Classification in Soft Tissue Tumors <i>Julie Fanburg-Smith, MD</i>
3:40 - 13:50	High Water Content Masses: When Do I Need to Worry? Mark J. Kransdorf, MD
3:50 - 14:00	Benign versus Malignant Peripheral Nerve Sheath Tumors: Radiologic Rules of the Road <i>Laura Fayad, MD</i>
4:00 - 14:15	Lipoma vs. Well-Differentiated Liposarcoma: Imaging Distinction <i>Francesca D. Beaman, MD</i>
4:15 - 14:30	Surgical Implications of Lipoma vs. Well-Differentiated Liposarcoma: What are the Options? <i>Carol D. Morris, MD, MS</i>
4:30 - 14:40	Biopsy Technique: Does it Matter Where I Biopsy? Jeffrey Peterson, MD
4:40 - 14:50	Soft Tissue Tumor Local Recurrence: Tricks of the Trade David M. Panicek, MD
4:50 - 15:00	Imaging of Synovial Neoplasms <i>Hillary W. Garner, MD</i> BREAK
5:00 - 15:30 5:30 - 17:00	
5:50 - 17:00	Rapid Fire Bone Tumors (ARS) Moderators: Violeta Vasilevska Nikodinovska MD, PhD, MSc, Paul O'Donnell, MBBS, FRCP, FRCR
5:30 - 15:40	What's New in the WHO Classification in Bone Tumors? S. Fiona Bonar, MB, FRCPath, FRCPA
5:40 - 15:50	Radiology Report for Bone Neoplasms: What's Important for Staging? <i>Leanne L. Seeger, MD, FACR</i>
5:50 - 16:00	Whole Body MRI for Tumor Imaging Koenraad Verstraete, MD
6:00 - 16:10	Enchondroma vs. Chondrosarcoma: Imaging Criteria <i>Hakan Ilaslan, MD</i>
6:10 - 16:20	Enchondroma vs. Chondrosarcoma: Surgical Perspective <i>Earl W. Brien, MD</i>
6:20 - 16:30	Update on Multiple Myeloma Michael E. Mulligan, MD
6:30 - 16:40	Imaging of Surface Bone Tumors Daniel Vanel, MD
6:40 - 16:50	Bone Tumor or Not That is the Dilemma <i>Rainer Erlemann, MD</i>
6:50 - 17:00	Vertebral Bone Marrow: Metastasis or Mimicker

### DAY 3

### FRIDAY, SEPTEMBER 28, 2018

### SPORTS MEDICINE IMAGING

8:00 - 10:00	Knee	1
	Moderators: Ian Beggs, FRCPE, FRCR	
	Andrea Rosskopf, MD	
8:00 - 8:15	Bone/OCD Klaus Bohndorf, MD	8
8:15 - 8:30	Cruciate Ligaments Nancy Major, MD	
8:30 - 8:45	Post-Op ACL Philip Robinson, FRCR	8
8:45 - 9:00	Menisci Andrew Grainger, BM, BS, MRCP, FRCR	,
9:00 - 9:15	Posterolateral Corner William Palmer, MD	6
9:15 - 9:30	Soft Tissue, Nerves, and Vascular Structures John Crues, MD, MS	Ģ
9:30 - 9:45	Extensor Mechanism <i>David Rubin, MD</i>	0
9:45 - 10:00	Lesions About the Proximal Tibiofibular Joint Josef Kramer, MD	C
10:00 - 10:30	BREAK	
10:30 - 12:00	Нір	
	Moderators: Suzanne Anderson, MD, PhD Hema Choudur, MBBS, FRCPC	
10:30 - 10:45	Hip Joint MRI Assessment: Pitfalls, Variation and Myths	
	Bruno Vande Berg, MD, PhD	
10:45 - 11:00	Pediatric Hip Imaging Filip Vanhoenacker, MD, PhD	
11:00 - 11:15	MRI of FAI: How to Assess and What to Report Donna Blankenbaker, MD	
11:15 - 11:30	Hip Surgery: How Does Imaging Help? <i>Michael Dienst, MD</i>	
11:30 - 11:45	Post-op Hip MRI: Differentiating Normal from Abnormal <i>Tobias Dietrich, MD</i>	-
11:45 - 12:00	Hip Intervention: Its Role in Diagnosis and Treatment <i>Luca Sconfienza, MD</i>	
12:00 - 13:30	LUNCH	
13:30 - 15:00	Foot/Ankle: An MRI Alone Will Make the	
	Diagnosis - Or Will It?	
	Moderators: Joseph Craig, MB, ChB, Charles Bush, MD	
13:30 - 13:45	Lateral Ankle Ligament Anatomy and Injuries Maryam Shahabpour, MD	
13:45 - 14:00	Medial Sided Ankle Pain: Deltoid Ligament and Beyond Julia Crim, MD	
14:00 - 14:15	Midfoot Sprains - More than Just the Lisfranc Ligament Carolyn Sofka, MD	
14:15 - 14:30	Making a Break For It: Tendon Subluxation/Dislocation <i>Ramy Mansour, MD</i>	-
14:30 - 14:50	Turf Toe - Not Just for American Football Players Hilary Umans, MD	-
14:50 - 15:00	Ultrasound of Acute Foot and Ankle Sports Injuries	-

4:50 – 15:00 Ultrasound of Acute Foot and Ankle Sports Injuries Mihra Taljanovic, MD, PhD

### **MUSCULOSKELETAL DISEASE**

8:00 - 10:00	Imaging Orthopedic Hardware Moderators: Thomas LeCorroller, MD, PhD Theodore Miller, MD
0.00 0.15	·
8:00 - 8:15	MR Imaging of Metal: How To Do It Christian Pfirrmann, MD, MBA
8:15 - 8:30	CT Scanning of Metal: How To Do It Kenneth Buckwalter, MD, MS, MBA
8:30 - 9:00	Multimodality Imaging of Hip and Knee Replacements Theodore Miller, MD, FACR
9:00 - 9:20	Imaging of Shoulder Replacements Alice Ha, MD, MS
9:20 - 9:40	Imaging of Ankle Replacements Laura Bancroft, MD, FACR
9:40 - 10:00	Plates and Screws - What Do They Do? Marcelo Bordalo-Rodrigues MD, PhD
10:00 - 10:30	BREAK
10:30 - 12:00	Imaging Peripheral Nerves with Detailed Anatomy
	and Lesion Characterization
	Moderators: Mario Maas, MD, PhD
10.00 10.55	Avneesh Chhabra, MD
10:30 - 10:55	Ultrasound of the Brachial Plexus, Pathology and Technique Made Easy <i>Carlo Martinoli, MD</i>
10:55 - 11:05	MR Neurography: Current Perspectives and Literature Review <i>Gustav Andreisek, MD, MBA</i>
11:05 - 11:20	Peripheral Nerve Anatomy and Lesions in the Ankle and Foot <i>Jean Luc Drape, MD</i>
11:20 - 11:30	MR Neurography of Extra-Spinal Sciatica John Carrino, MD, MPH
11:30 - 11:45	Imaging Nerve Entrapment Syndromes of the Elbow and Forearm <b>Catherine Petchprapa MD</b>
11:45 - 12:00	Peripheral Nerve Lesions Around the Shoulder, How to Make the Imaging Diagnosis? <i>Ronald Adler, MD, PhD</i>
12:00 - 13:30	LUNCH
13:30 - 15:00	Cartilage/Bone (SAM)
	Moderators: Garry Gold, MD, Jung-Ah Choi, MD
13:30 - 13:45	Normal Cartilage Structure <i>Richard Kijowski, MD</i>
13:45 - 13:55	Fast Imaging - 5 Minute Knee MRI Soterios Gyftopolous, MD
13:55 - 14:05	Isotrophic 3D T2 Mapping Patrick Omoumi, MD, PhD
14:05 - 14:15	Identifying Hidden Zones of the Far Posterior Cartilage of the Femoral Condyles <i>John Crues, MD, MS</i>
14:15 - 14:30	Cartilage Repair - Microfracture Thomas Link, MD, PhD
14:30 - 14:45	Cartilage Repair - ACI <b>Carl Winalski, MD</b>
14:45 - 15:00	Lesions at the Osteochondral Junction Christine Chung, MD

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TUESDAY, SEPTEMBER 25, 2018

# FOR COMPLETE ULTRASOUND AGENDA internationalskeletalsociety.com

COMBINED GROUP	ULTRASOUND LECTURES AND DEMONSTRATIONS WILL INCLUDE:
	<ul> <li>Normal Muscle, Nerve and Fat</li> <li>Brachial Plexus</li> <li>Upper Extremity Nerves</li> <li>Lower Extremity Nerves</li> </ul>
INDIVIDUAL GROUPS	ULTRASOUND DEMONSTRATIONS WILL INCLUDE:
	<ul> <li>Muscle Injury</li> <li>Muscle Masses</li> <li>Muscle Inflammation</li> <li>Guided Treatment of Muscle Injury</li> <li>Peripheral Nerve Abnormalities and Entrapments</li> <li>Guided Treatment of Peripheral Nerve Abnormalities</li> <li>Fat Abnormalities (e.g. lipoma, fat necrosis, cellulitis)</li> </ul>

# **COURSE DIRECTORS**

Dr. Julie C. Fanburg-Smith Orthopedic and Soft Tissue Pathology Dr. Mark D. Murphey Musculoskeletal Radiology Dr. Franklin H. Sim Orthopedic Oncologic Surgery FOR COMPLETE PROGRAM DETAILS: internationalskeletalsociety.com

# **ONE-DAY PATHOLOGY ORTHOPEDIC COURSE**

# WHAT IS NEW IN BONE?

Radiology, Pathology and Surgical Treatment: An Updated Sunday Interdisciplinary Bone Course Including German-Speaking Presenters

# Sunday, September 23, 2018 Time: 08:30 - 15:30 | Location: Charlottenburg

**REGISTER ONLINE** internationalskeletalsociety.com

The deadline for discounted early registration is 08/4/2018. After 08/4/2018, regular registration fees will apply to online and

onsite registration. Registration Fees a	re subject to change.	Rates are al	l USD. To lock ii	n these rates, <b>REGIST</b>	ER NOW!	
Fellow  Full Time Administrator  Pat	<b>THAT BEST DESCRIE</b> her Medical Profess thologist ysician diologist	ional [	<b>STATUS:</b>   Researcher   Resident   Rheumatolo   Student/Trai			
INDUSTRY REGISTRATION - Industry En			supporting ISS (	OR Industry Medical Sc	ience Liaison . 🗆 \$820	
(Proof of MSL Title may be required before Industry Employee whose company is NO Your submission will need to be approve To find out if your company is currently so or by email at donna@veritasmeetings.co	OT already supporting l d prior to confirmation supporting ISS, please c	ISS of your regi	stration. Approv	val may be based on cu	rrent Industry support.	
HOW DID YOU LEARN ABOUT TH Question Word of Mouth - Colleague ISS Website Email From ISS Email From Other Societies (DGMS PLEASE PRINT CLEARLY Title: Dr. Prof. Mr. N	□ Skelet □ Adver □ Facebo R, SSR, etc.) □ Websi	al Radiology tisement in ook Adverti te Advertise	/ Journal Professional Jo sement	□ Calendar - ournal □ Registration □ Flyer-Postc	Monthly Listing n Brochure Mailer ard at another meetin al Slides at another me	
First Name (Forename/Given Name	e):					
Last Name (Surname/Family Name	?):					
Academic Degree(s):						
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City:		State/Pro	ovince:	Postal Zip Cod	e:	
Country:						
Phone:		Fax:				
Email:						
MEETING REGISTRATION* REGISTRATION CATEGORIES			<b>SCOUNTED</b> 08/4/2018)	<b>REGULAR FEES</b> (after 08/4/2018)	TOTAL COST	
ISS Member (in good standing fo	or 2018) and DGMSF	R Member	PLEASE REG	ISTER ONLINE		
Non-Member Practicing Physicia	۱n	\$820		\$920	=\$	
🖵 Non-Physician Provider (Nurse, I	PA, Technologist)	\$620		\$720	=\$	
Resident Expected Graduation Y	ear	\$620		\$720	=\$	
Fellow Expected Graduation Yea	r	\$620		\$720	=\$	
□ Student Expected Graduation Ye	ar	\$620		\$720	=\$	

**ULTRASOUND COURSE REGISTRATION** Ultrasound Course - September 25, 2018 (Early Discount BEFORE 08/4/2018) \$250 \$325 =\$

Student Expected Graduation Year

(Pre-registration is required for this course. There is a 100 person maximum, so we encourage you to register early.)

**ISS 2018 REGISTRATION FORM** continued

PATHOLOGY/ORTHOPEDIC				
One-Day Pathology Orthopedic Course	\$100	=\$		
Optional opportunity to observe the ISS Members Meeting if registering for the Pathology/Orthopedic Course (optional opportunity for non members)	\$25	=\$		
<b>SELF-ASSESSMENT MODULES REGISTRATION</b> (PLEASE NOTE: *Self-Assessment Module fees are NOT inclu	\$25 Ided with registration)	=\$		
ADDITIONAL WELCOME RECEPTION TICKETS FOR NON-REGISTERED GUESTS: *Two tickets to the Welcome Reception are included with your registration. Please only purchase additional tickets if you are planning to bring additional guests to this event.				
Welcome Reception - Wednesday September 26, 2018 #	of tickets = at \$50 per ticket	=\$		
Total Registration Fee		=\$		
Total Special Events Tickets		=\$		
GRAND TOTAL		=\$		

### **PAYMENT INFORMATION**

The ISS requires full payment for registration fees and optional activities by check or credit card.

□ Check\* (payable to the ISS) □ Visa □ MasterCard □ American Express □ Discover

\*All fees must be paid in US dollars. Checks must be drawn in US dollars, on a US bank, and made payable to the International Skeletal Society (ISS) (Tax ID #23-7366930). Be sure to print your name on the check.

Credit Card #:	Expiration Date:	CVV#:
Name on Credit Card		
Billing Address:		

Signature:

The issuer of the card identified on this item is authorized to pay the amount shown as TOTAL upon proper presentation. I promise to pay such TOTAL (together with any other charges due thereon) subject to and in accordance with the agreement governing the use of such card.

### PHONE REGISTRATIONS CANNOT BE ACCEPTED.

Acceptable registration methods include

• By Fax: +1 847-960-3861

- By Mail: International Skeletal Society 1061 East Main Street, Suite 300 East Dundee, IL 60118
- Online: www.internationalskeletalsociety.com

If paying by check, please forward payment to:

International Skeletal Society Attn: Registration 1061 East Main Street, Suite 300 East Dundee, IL 60118 \*Wire Transfers

Please email info@internationalskeletalsociety.com for detailed wire transfer information

### **REGISTRATION CANCELLATION & REFUND POLICY**

Registration refund requests must be submitted in writing to the ISS Executive Office by 08/4/2018. All refund requests will be subject to a \$100 processing fee. No refunds will be made after 08/4/2018.

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# **GENERAL MEETING INFORMATION**

INTERCONTINENTAL

BERLIN

### **REGISTRATION/INFORMATION DESK HOURS**

### LOCATION: POTSDAM FOYER

Tuesday, September 25, 2018 Wednesday, September 26, 2018 07:00 - 17:00 Thursday, September 27, 2018 Friday, September 28, 2018

07:00 - 17:00 07:00 - 17:00 07:00 - 17:00

### **EXHIBIT HALL HOURS**

### LOCATION: POTSDAM II

Wednesday, September 26, 2018	07:00 - 16:00
Thursday, September 27, 2018	07:00 - 16:00
Friday, September 28, 2018	07:00 - 16:00

### **EVENING EVENTS**

WELCOME RECEPTION WEDNESDAY, SEPTEMBER 26, 2018 TIME: 6:30 - 08:30 LOCATION: POTSDAM II ATTIRE: Business Casual

**COST:** Two tickets included in registration fee. Additional guest tickets are \$50 each.

This year's Welcome Reception will be held in Potsdam II inside of the InterContinental Berlin. Visit with exhibitors and colleagues while sampling an array of delicious foods.

\*Times and locations are subject to change

# **HOTEL, TRAVEL & TRANSPORTATION & REGISTRATION INFORMATION**

### HOTEL INFORMATION

InterContinental Berlin Budapester Strasse 2 Berlin, 10787, Germany Main: +49 30 26020 | Fax: +49 30 2602 2600 https://www.ihg.com/intercontinental/hotels/us/en/berlin/berha/ hoteldetail?cm\_mmc=GoogleMaps-\_-IC-\_-DE-\_-BERHA

### **RESERVATIONS:** +49 30 26020 or

https://book.passkey.com gt/216143399?gtid=6cfad005751a0ed4aa16813f994ff8d2

#### **ROOM RATE**

ISS has negotiated a discounted rate of 209 Euros per night at the InterContinental Berlin.

### HOTEL DEADLINE

The cut-off-date for online bookings is August 9, 2018. ISS encourages you to make your reservation early, as the hotel and discount block may sellout before this date. After this date, guests can continue to reserve rooms via phone or email. Reservations will be accepted based on availability.

### RESERVATIONS

Attendees are responsible for making their reservations by calling the hotel at +49 30 26020. Please reference the ISS 2018 Meeting to receive the discounted rate. Reservations can also be made online at https://book.passkey.com/gt/216143399?gtid=6cfad005751a0ed4aa16813f994ff8d2

### HOTEL DEPOSIT AND CANCELLATION POLICY

Rooms may be cancelled by individual guests without a charge until 14 days prior to arrival. For reservations of more than 5 rooms per night within the block, the InterContinental reserves the right to adjust the cancellation terms.

### PARKING

Car parking is available

- · Self-Parking Fee: 26 EUR
- · Valet parking is available
- · Valet Parking Fee: 26 EUR
- · Underground parking 26.00 EUR daily fee 126 spaces. Valet parking is also available.

### **DIRECTIONS FROM THE AIRPORT**

TEGEL AIRPORT (TXL) : Take Bus X9 to "Zoologischer Garten". Change to Bus 200, Directions from Airport "Michelangelostrasse" to "Budapester Strasse". The bus stops in front of the hotel. Or take a 10 minute walk / 500m from "Zoologischer Garten" to the hotel.

SCHOENEFELD (SXF) : Take the RE7 or RB14 train to "Zoologischer Garten". Change to Bus 200, direction "Michelangelostrasse" to "Budapester Strasse". The bus stops in front of the hotel. Or take a 10 minute walk / 500m from "Zoologischer Garten" to the hotel. Ticket zone is ABC.

#### **REGISTRATION INFORMATION**

### **Registration Fee Includes:**

- Entrance to Refresher Course
- Breakfasts
- · Two tickets to the Welcome Reception
- Program Materials

### **ULTRASOUND COURSE**

Registration for the Ultrasound Course on Tuesday, September 25, 2018, is limited and will be allocated on a first-come, first-served basis to the first 100 participants upon payment of the registration fee. Please be sure to register on the meeting registration form if you wish to attend.

#### EARLY REGISTRATION DEADLINE

Meeting registration forms must be received by the ISS Executive Office by 08/4/2018 to receive the discounted early registration rate. All forms received after this deadline will be assessed the regular registration fee.

#### **REGISTRATION CANCELLATION AND REFUND POLICY**

Registration refund requests must be submitted in writing to the ISS Executive Office no later than 08/4/2018. All refund requests will be subject to a \$100 processing fee. No refunds will be made after 08/4/2018

#### SPECIAL NEEDS

For accommodations on the basis of disability or special dietary needs, please call +1 847-752-5355.

### CONTACT THE ISS EXECUTIVE OFFICE BY:

Phone: +1 847-752-5355 | Fax: +1 847-960-3861 Email: info@internationalskeletalsociety.com Website: www.internationalskeletalsociety.com



### International Skeletal Society

1061 East Main Street | Suite 300 | East Dundee, IL 60118

RETURN SERVICE REQUESTED



JW Marriott Vancouver | Vancouver, Canada | www.internationalskeletalsociety.com