The Scoliosis Research Society presents

Current Concepts & Hands-On Course

MAY 8-11, 2019
ISTANBUL, TURKEY
ISTANBUL MARRIOTT HOTEL ASIA
CENTER OF ADVANCED SIMULATION AND EDUCATION (CASE) - HANDS-ON COURSE ONLY

Final Program

www.srs.org • www.srs.org/ccsd0519
Corporate Support

We are pleased to acknowledge and thank the companies that provided financial and in-kind support to SRS for this Current Concepts & Hands-On Course.

Current Concepts in Spine Deformity Course Supporters

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Spine Deformity Solutions Course Supporters

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Future SRS Meetings

Worldwide Courses
Barcelona, Spain
In conjunction with SILACO-GEER
May 29, 2019

Spine Deformity Solutions: A Hands-On Course
November 1-3, 2019 – Bangkok, Thailand

Current Concepts in Spine Deformity
December 13-14, 2019 – Tokyo, Japan

International Meeting on Advanced Spine Techniques (IMAST)
26th IMAST
July 17-20, 2019 – Amsterdam, the Netherlands

27th IMAST
April 1-4, 2020 – Athens, Greece

Annual Meeting
54th Annual Meeting
September 18-21, 2019 – Montréal, Canada

55th Annual Meeting
September 9-12, 2020 – Phoenix, Arizona
Planning Committee

SRS President 2018-2019
Peter O. Newton, MD

Worldwide Course Committee Chair
Benny T. Dahl, MD, PhD, DMSci

Current Concepts Course Chairs
Kariman Abelin-Genevois, MD, PhD
Alpaslan Senkoylu, MD

Hands-On Course Chairs
Ahmet Alanay, MD
Haluk R. Berk, MD

Faculty
René Castelein, MD, PhD
Kenneth MC Cheung, MD
David H. Clements, III, MD
John R. Dimar, II, MD
Meric Enercan, MD
Munish C. Gupta, MD
Yong Hai, MD
Azmi Hamzaoglu, MD
Steven M. Mardjetko, MD, FAAP
Hossein Mehdian, MD, FRCS(Ed)
Ibrahim Obeid, MD
Francisco Javier Sanchez Perez-Grueso, Sr., MD
Pierre Roussouly, MD
Michael Ruf, MD
Christopher I. Shaffrey, Sr., MD
Muharrem Yazici, MD
Caglar Yilgor, MD
General Meeting Information

Venue Information
Istanbul Marriott Hotel Asia
Kayisdagi Caddesi No 3, Atasehir
Istanbul, Turkey 34750
marriottistanbulasia.com

Center of Advanced Simulation and Education (CASE) - Hands-On Course Only
Kerem Aydinlar Kampusu Icerenkoy Mahallesi
Kayisdagi Caddesi No: 32
Atasehir, Istanbul, Turkey 34752

Admission To Sessions
Official name badges will be required for admission to all sessions. All course attendees will receive a name badge with their registration materials. Name badges should be worn at all time while inside the Istanbul Marriott Hotel Asia meeting space, as badges will be used to control access to sessions and activities. Attendees are cautioned against wearing their name badges while away from the venue, as badges draw unwanted attention to your status as visitors to the city.

Attire
Business casual (polo or dress shirts, sports coats) is appropriate for the meeting sessions; ties are not required. Casual attire and scrubs are appropriate for the Hands-On Course. Scrubs and disposables will be provided at the lab.

Cell Phone Protocol
Please ensure that cell phone ringers, pagers and electronic devices are silenced or turned off during all sessions.

Emergency & First Aid
The Istanbul Marriott Hotel Asia and Acibadem University Center of Advanced Simulation and Education (CASE) are fully prepared to handle emergency requests and first aid. Contact a SRS staff person for support. Remember to note all emergency exits within the venue.

Evaluations
Please take time to complete the online evaluation forms. Evaluations will need to be completed in order to receive EACCME credit. Your input and comments are also essential in planning future Current Concepts and Hands-On Courses.

Presentations
PDF versions of the PowerPoint presentations and handouts are available to view and download from the CCSD meeting website, www.srs.org/ccsd0519. To access the files, you will need to login with your SRS ID number and last name.

Wireless Internet
There will be Wireless Internet access for the entire meeting space starting 8:00 on May 8 and ending 13:00 on May 10.

Language
English will be the official language of the SRS Current Concepts & Hands-On Course.

Lost & Found
Please feel free to stop by the SRS Registration Desk if you have lost or found an item during the course.

Registration Desk
Location: Yakut (Exhibit Hall)
Wednesday, May 8 11:30 – 18:00
Thursday, May 9 6:30 – 16:00
Friday, May 10 6:30 – 11:00

Smoking Policy
Smoking is not permitted during any meeting activity or event.

Special Needs
If you have any health issues for which you may require special accommodations or assistance, please notify the SRS staff at the Registration Desk. We will make every effort to accommodate any special needs.

Video Recording Prohibited
SRS does not allow personal video recording of the presentations of any kind. SRS holds the right to confiscate any and all recordings taken of any of the presentations.

Welcome Reception
Wednesday, May 8, 2019
18:35-19:30
Exhibit Hall (Yakut) at the Istanbul Marriott Hotel Asia
All registered delegates are invited to attend the Welcome Reception on Wednesday, May 8. The reception will be hosted in the Exhibit Hall at the Istanbul Marriott Hotel Asia, where beverages and light hors d’oeuvres will be served. There is no charge for registered delegates, though your name badge is required for entrance. Dress for the Welcome Reception is business casual.

Electricity
Turkey operates on 220 volts compared to the standard 120 volts in the United States.

Time Zone
Istanbul is in TRT (Turkey Time) which is three (3) hours ahead of Greenwich Mean Time.
Meeting Description
The Current Concepts & Hands-On Course is a forum for the realization of the Society’s mission and goals, the improvement of patient care for those with spinal deformities. The course will be an intimate setting with a low attendee to faculty ratio. Topics include Foundation Knowledge, Early Onset Deformity, AIS, Neuromuscular Deformity, Adult Deformity, Kyphosis and Complications. The course will also include a hands-on skills training component limited to 24 participants.

Learning Objectives
Upon completion of this course, participants should be able to:
- Describe normal growth, maturation and alignment of the spine
- Explain natural history and management of different deformity types including kyphosis, early onset, AIS, neuromuscular, cervical, adult and acquired
- Define how to insert implants to the spine and ilium
- Demonstrate different types of exposures and ostetomies to spinal column

Target Audience
Residents, fellows and orthopaedic and neurosurgeons who have an interest and are involved in spinal deformity management and treatment.

Accreditation Statement
The Current Concepts & Hands-On Course, Istanbul, Turkey, 08/05/2019-11/05/2019 has been accredited by the European Accreditation Council for Continuing Medical Education (EACCME®) with 27 European CME Credits (ECMEC®s). Each medical specialist should claim only those hours of credit that he/she actually spent in the educational activity.

Through an agreement between the Union Européenne des Médecins Spécialistes and the American Medical Association, physicians may convert EACCME® credits to an equivalent number of AMA PRA Category 1 Credits™. Information on the process to convert EACCME® credit to AMA credit can be found at www.ama-assn.org/education/earn-credit-participation-international-activities.

Claiming Credit
Attendees can claim their EACCME certificates exclusively online at https://www.srs.org/ccsd0519/eaccme-evaluation following the submission of their course evaluations.

Disclosure of Conflict of Interest
It is the policy of SRS to insure balance, independence, objectivity and scientific rigor in all of their educational activities. In accordance with this policy, SRS identifies conflicts of interest with instructors, content managers and other individuals who are in a position to control the content of an activity. Conflicts are resolved by SRS to ensure that all scientific research referred to, reported or used in a CME activity conforms to the generally accepted standards of experimental design, data collection and analysis.

FDA Statement (United States)
Some drugs and medical devices demonstrated during this course have limited FDA labeling and marketing clearance. It is the responsibility of the physician to be aware of drug or device FDA labeling and marketing status.

Insurance/Liabilities and Disclaimer
SRS will not be held liable for personal injuries or for loss or damage to property incurred by participants at the Current Concepts & Hands-On Course. Participants are encouraged to take out insurance to cover loss incurred in the event of cancellation, medical expenses or damage to or loss of personal effects when traveling outside of their own countries. SRS cannot be held liable for any hindrance or disruption of course proceedings arising from natural, political, social or economic events or other unforeseen incidents beyond its control. Registration of a participant implies acceptance of this condition. The materials presented at this activity are made available for educational purposes only. The material is not intended to represent the only, nor necessarily best, methods or procedures appropriate for the medical situations discussed, but rather is intended to present an approach, view, statement or opinion of the faculty that may be helpful to others who face similar situations. SRS disclaims any and all liability for injury or other damages resulting to any individual attending the Current Concepts & Hands-On Course meeting and for all claims that may arise out of the use of techniques demonstrated therein by such individuals, whether these claims shall be asserted by a physician or any other person.
## Conflict of Interest Disclosures

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<thead>
<tr>
<th>SRS Board of Directors</th>
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<td>Muharrem Yazici, MD</td>
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<td>Benny T. Dahl, MD, PhD, DMSci</td>
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<td>Kariman Abelin-Genevois, MD, PhD</td>
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Floorplan

Istanbul Marriott Hotel Asia, Floor 1
Safir 1 – General Session Room
Safir 2 – Case Discussions: Pediatric
Safir 3 – Case Discussions: Adult
Yakut – Exhibit Hall and Registration
Lapis 1 & 2 – Industry Hands-on Workshops
Exhibits & Workshops

Exhibit Hall Hours*
Wednesday, May 8 13:00 – 19:30
Thursday, May 9 7:30 – 16:00
Friday, May 10 7:30 – 11:00

EXHIBITORS
Medtronic International Trading Sarl – Booth #1
Route du Molliau 31, Case postale
1131 Tolochenaz, Switzerland
www.medtronic.eu

As a global leader in medical technology, services and solutions, Medtronic improves the lives and health of millions of people each year. We use our deep clinical, therapeutic and economic expertise to address the complex challenges faced by healthcare systems today. Let’s take healthcare Further, Together. Learn more at Medtronic.eu

Norm Medical, Turkey – Booth #2
İvedik Organize Sanayi Bölgesi,
1468. Cad. No: 193, 06378
Yenimahalle, Ankara, Turkey
www.normltd.net

Norm Company was established in Ankara in 2006. NORM, which have a scientific and technological infrastructure and human resources in terms of approval international standards, strong and high production capacity, is one of the leading manufacturer Company of the Turkish Medical Industry. NORM exports spinal, trauma implant and surgical instrument to the world market.

Norm Company, who is aware of the human life the world’s most important values, develops products according to the market needs, employees’ skills and knowledge after the result of R & D activities and keeps continue to development of the innovative products that will carry the human life to the future.

Norm Company extend its world class implants, instrumentation, and service by partnering with researchers and educators to advance the science and knowledge of spine and trauma. Norm constantly in the pursuit of better patient care and understand that speed is critical because life cannot wait.

Our mission is to provide higher customer loyalty and patient satisfaction with high technology, creative products and service. Our vision is to be one of the world’s most admired, fastest growing medical company.

Hands-on Workshops*
Wednesday, May 8 – 17:35-18:35
K2M, now a part of Stryker – Lapis 1 & 2
3D Evaluation of the AIS Patient
René Castelein, MD, PhD

Thursday, May 9 – 12:15-13:15
Medtronic – Lapis 1 & 2
Innovations in Deformity Driving Better Outcomes
From AVBT to Immersive Education with Virtual Reality
Ahmet Alanay, MD and Andrew James Bowey, FRCS (Tr&Orth)
Current Concepts in Spine Deformity Program

Istanbul Marriott Hotel Asia • May 8-10, 2019

Wednesday, May 8, 2019

11:30-18:00 Registration Open
13:00-19:30 Exhibits Open
12:30-12:45 Introduction of SRS – Muhammet Yazici, MD - SRS Vice President
12:45-13:00 Pre-Course Quiz
13:00-15:00 Session 1: Foundation Knowledge
  Moderators: Kariman Abelin-Genevois, MD, PhD & Alpaslan Senkoylu, MD
  13:00-13:15 Growth of the Spine
         René Castelein, MD, PhD
  13:15-13:35 Assessment of Maturation
         Kenneth MC Cheung, MD
  13:35-13:45 Discussion
  13:45-14:00 Bone Healing, Fusion Biology and Prerequisites on How to Achieve a Solid Fusion
         Steven M. Mardjetko, MD, FAAP
  14:00-14:20 Alignment of the Spine
         Pierre Roussouly, MD
  14:20-14:30 Discussion
  14:30-15:00 Case Based Discussion: Alignment of the Spine
         Munish Gupta, MD
  15:00-15:30 Refreshment Break & Exhibit Viewing*
  15:30-17:30 Session 2: Early Onset Deformity
  Moderators: Ahmet Alanay, MD & Haluk Berk, MD
  15:30-15:45 Definition and Classification of EOD
         Muhammet Yazici, MD
  15:45-16:00 Casting - Indications and Techniques
         Francisco Javier Sanchez Perez-Grueso, MD
  16:00-16:15 Overview of Growth Friendly Surgical Techniques
         Yong Hai, MD
  16:15-16:25 Discussion
  16:25-17:00 Case Based Discussion: Decision Making - Conservative vs Surgery
         Steven M. Mardjetko, MD, FAAP
  17:00-17:30 Case Based Discussion: Congenital Scoliosis
         Azmi Hamzaoglu, MD
  17:35-18:35 Industry Hands-On Workshop* - Lapis 1 & 2
         3D Evaluation of the AIS Patient
         René Castelein, MD, PhD
         This workshop is programmed by K2M, now a part of Stryker. (See page 8 for more information.)
  18:35-19:30 Welcome Reception*
         Exhibit Hall

*Denotes Non-CME Session
Thursday, May 9, 2019

06:30-16:00 Registration Open
07:30-16:00 Exhibits Open
07:00-08:00 Concurrent Case Based Discussions with Breakfast (Pediatric & Adult)
Moderators: Ibrahim Obeid, MD & Francisco Javier Sanchez Perez-Grueso, MD
07:00-08:00 Pediatric Deformity – Safr 2
Ibrahim Obeid, MD (Moderator); David Clements, III, MD; Alpaslan Senkoylu, MD; Michael Ruf, MD
07:00-08:00 Adult Deformity – Safr 3
Francisco Javier Sanchez Perez-Grueso, MD (Moderator); Christopher I. Shaffrey, MD; Caglar Yilgor, MD; Hossein Mehdian, MD, FRCS(Ed)

08:05-10:05 Session 3: AIS
Moderators: Azmi Hamzaoglu, MD & Michael Ruf, MD
08:05-08:20 Etiology and Natural History of AIS
René Castelain, MD, PhD
08:20-08:50 Case Based Discussion: Classification
Kariman Abelin-Genevois, MD, PhD
08:50-09:00 Brace Treatment from Start to Wean Off – Natural History
Caglar Yilgor, MD
09:00-09:15 Surgical Indication, Pre-op Planning in AIS and Determining Fusion Levels
Muharrem Yazici, MD
09:15-09:25 Discussion
09:25-10:05 Case Based Discussion: Pre-op Planning, Shoulder Imbalance, Sagittal Alignment and PJK
Ibrahim Obeid, MD

10:05-10:25 Refreshment Break & Exhibit Viewing*

10:25-12:05 Session 4: AIS
Moderators: Steven M. Mardjetko, MD, FAAP & Pierre Roussouly, MD
Meric Enercan, MD
10:40-10:55 Adding on in AIS: Long Term Results and Consequences
Hossein Mehdian, MD, FRCS(Ed)
10:55-11:10 HRQoL: How to Implement in Daily Practice
Haluk Berk, MD
11:10-11:20 Discussion
11:20-12:05 Case Based Discussion: Management of Complications in AIS – Best Practices
Caglar Yilgor, MD

12:05-13:15 Lunch Break*

Innovations in Deformity Driving Better Outcomes
From AVBT to Immersive Education with Virtual Reality
Ahmet Alanay, MD and Andrew James Bowey, FRCS (Tr&Orth)
This workshop is programmed by Medtronic. (See page 8 for more information.)
## Current Concepts in Spine Deformity Program
### Thursday, May 9, 2019

<table>
<thead>
<tr>
<th>Time</th>
<th>Session 5: Neuromuscular and Cervical Deformity</th>
</tr>
</thead>
<tbody>
<tr>
<td>13:20-15:15</td>
<td>Moderators: Hossein Mehdian, MD, FRCS(Ed) &amp; David H. Clements, III, MD</td>
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<tr>
<td>13:20-13:45</td>
<td>Decision Making and Preoperative Planning in CP Cases Kariman Abelin-Genevois, MD, PhD</td>
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<td>13:50-14:00</td>
<td>Discussion</td>
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<tr>
<td>14:00-14:30</td>
<td>Case Based Discussion: Preoperative Planning in CP Kariman Abelin-Genevois, MD, PhD</td>
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<tr>
<td>14:30-14:45</td>
<td>Principles and Treatment of Cervical Deformity and Cervical Alignment Christopher I. Shaffrey, MD</td>
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<tr>
<td>14:45-15:15</td>
<td>Case Based Discussion: Cervical Deformity and Cervical Alignment Hossein Mehdian, MD, FRCS(Ed)</td>
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<tr>
<td>15:15-15:35</td>
<td>Refreshment Break &amp; Exhibit Viewing*</td>
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<table>
<thead>
<tr>
<th>Time</th>
<th>Session 6: Adult and Degenerative Spinal Deformity</th>
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<tbody>
<tr>
<td>15:35-17:30</td>
<td>Moderators: René Castelein, MD, PhD &amp; Ibrahim Obeid, MD</td>
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<tr>
<td>15:35-15:50</td>
<td>Natural History and Etiology of Degenerative Deformity Pierre Roussouly, MD</td>
</tr>
<tr>
<td>15:50-16:05</td>
<td>Minimally Invasive Surgical Solutions in Degenerative Deformity Christopher I. Shaffrey, MD</td>
</tr>
<tr>
<td>16:05-16:15</td>
<td>Discussion</td>
</tr>
<tr>
<td>16:15-16:30</td>
<td>Revision Surgery for ASD: Pre-Operative Planning and Surgical Techniques Munish Gupta, MD</td>
</tr>
<tr>
<td>16:30-16:45</td>
<td>Osteotomy Types and their Indications in ASD Azmi Hamzaoglu, MD</td>
</tr>
<tr>
<td>16:45-17:00</td>
<td>How to Maximize Efficiency/Reduce Complication Rates Ahmet Alanay, MD</td>
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<tr>
<td>17:00-17:30</td>
<td>Case Based Discussion: ASD Ibrahim Obeid, MD</td>
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<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>19:00-22:00</td>
<td>Faculty &amp; Industry Dinner at Lacivert Restaurant* (by invitation only)</td>
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<tr>
<td></td>
<td>Participant free night out.</td>
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</tbody>
</table>

*Denotes Non-CME Session
Current Concepts in Spine Deformity Program

Friday, May 10, 2019

06:30-11:00  Registration Open
07:30-11:00  Exhibits Open
07:00-08:00  Concurrent Case Based Discussions with Breakfast (Pediatric & Adult)
            Moderators: Muharrem Yazici, MD & Ahmet Alanay, MD
            07:00-08:00  Pediatric Deformity – Safr 2
                Muharrem Yazici, MD (Moderator); René Castelein, MD, PhD; Meric Enercan, MD; Yong Hai, MD
            07:00-08:00  Adult Deformity – Safr 3
                Ahmet Alanay, MD (Moderator); Kenneth MC Cheung, MD; Pierre Roussouly, MD; Munish Gupta, MD

08:05-10:20  Session 7: Kyphosis and Spondylolisthesis
            Moderators: Munish Gupta, MD & Meric Enercan, MD
            08:05-08:20  Scheuermann’s Kyphosis: Surgical Indications and Principles of Surgical Treatment
                John R. Dimar, II, MD
            08:20-08:35  Determination of Fusion Levels in Scheuermann’s Kyphosis & How to Prevent Junctional Failures
                Ahmet Alanay, MD
            08:35-08:45  Discussion
            08:45-09:00  Case Based Discussion: Scheuermann’s Kyphosis
                David H. Clements, III, MD
            09:00-09:10  Spondylolysis - Management in Athletes
                Haluk Berk, MD
            09:10-09:30  Classification of Spondylolisthesis and Practical Usage for Decision Making
                Michael Ruf, MD
            09:30-09:40  Discussion
            09:40-10:20  Case Based Discussion: HG Dysplastic Spondylolisthesis
                John R. Dimar, II, MD

10:20-10:40  Refreshment Break & Exhibit Viewing*
10:40-11:40  Session 8: Acquired Deformity
            Moderators: Christopher I. Shaffrey, MD & Yong Hai, MD
            10:40-10:50  Post-Tuberculous (TB) Kyphosis - Prevention
                Kenneth MC Cheung, MD
            10:50-11:05  Case Based Discussion: Post-TB Kyphosis - Management
                Yong Hai, MD
            11:05-11:15  Post Traumatic Kyphosis
                Alpaslan Senkoylu, MD
            11:15-11:40  Case Based Discussion: Deformity with Neoplasm
                John R. Dimar, II, MD

11:40-11:50  Final Remarks & Post Course Quiz
            Alpaslan Senkoylu, MD

11:50-12:00  Boxed Lunches Available for Those Attending the Hands-On Course*
12:00-12:50  Transfer to CASE for Those Attending the Hands-On Course* (Advance registration required)

*Denotes Non-CME Session
Notes

Session 1: Foundation Knowledge: Pediatrics
What did you learn during this session?

How will you include the new things you learned in your practice?

What questions do you still have or wished you asked?
Notes

Session 2: Early Onset Deformity

What did you learn during this session?

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How will you include the new things you learned in your practice?

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What questions do you still have or wished you asked?

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Thursday Case Based Discussion (Pediatric or Adult)

What did you learn during this session?

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How will you include the new things you learned in your practice?

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What questions do you still have or wished you asked?

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Notes

Session 3: AIS
What did you learn during this session?

How will you include the new things you learned in your practice?

What questions do you still have or wished you asked?
Notes

Session 4: AIS

What did you learn during this session?

How will you include the new things you learned in your practice?

What questions do you still have or wished you asked?
Notes

Session 5: Neuromuscular and Cervical Deformity

What did you learn during this session?

How will you include the new things you learned in your practice?

What questions do you still have or wished you asked?
Session 6: Adult and Degenerative Spinal Deformity
What did you learn during this session?

How will you include the new things you learned in your practice?

What questions do you still have or wished you asked?
Notes

Friday Case Based Discussion (Pediatric or Adult)
What did you learn during this session?

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How will you include the new things you learned in your practice?
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What questions do you still have or wished you asked?
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Notes

Session 7: Kyphosis and Spondylolisthesis
What did you learn during this session?

How will you include the new things you learned in your practice?

What questions do you still have or wished you asked?
Notes

Session 8: Acquired Deformity

What did you learn during this session?

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How will you include the new things you learned in your practice?

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What questions do you still have or wished you asked?

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Spine Deformity Solutions: A Hands-On Course

Center of Advanced Simulation and Education (CASE) - Acibadem University
May 10-11, 2019

Advance registration required.
Due to the nature of the course, there is a maximum number of participants and onsite registration is not available.
Registration for the Hands-On Course is indicated by a blue name badge.
### Spine Deformity Solutions: A Hands-On Course Program

**Friday, May 10, 2019**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:00-12:50</td>
<td>All Hands-on course participants shuttle from the Istanbul Marriott Hotel Asia to CASE</td>
</tr>
<tr>
<td>13:00-13:30</td>
<td><strong>Session 1: Video Demonstrations</strong></td>
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<tr>
<td></td>
<td>Moderator: Kariman Abelin-Genevois, MD, PhD</td>
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<tr>
<td></td>
<td>13:00-13:15 Hooks, Screws and Rod Bending</td>
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<td></td>
<td>13:15-13:30 Lateral Lumbar Approach</td>
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<td></td>
<td>*Denotes Non-CME Session</td>
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<td>13:30-13:45</td>
<td>Proceed to lab and change clothes</td>
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<tr>
<td>13:45-15:15</td>
<td><strong>Lab 1, Rotation 1 – 6 Stations (3 Cadavers Prone, 3 Cadavers Lateral)</strong></td>
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<tr>
<td></td>
<td><strong>Group 1</strong>                                    <strong>Lab 1A: 3 Stations, Cadavers Prone, without C-arm</strong></td>
</tr>
<tr>
<td></td>
<td>Thoracic-Lumbar-Ilium; Insertion of Hooks and Pedicle Screws; Sacro-Pelvic Fixation. Open,</td>
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<tr>
<td></td>
<td>anatomy based (Left side of the spine only)</td>
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<tr>
<td></td>
<td><strong>Group 2</strong>                                    <strong>Lab 1B: 3 Stations, Cadavers Lateral Decubitus with C-arm</strong></td>
</tr>
<tr>
<td></td>
<td>Lateral Lumbar Approach (from left side), S2Ala-Ilium Screws</td>
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<td></td>
<td>(Each group does two discs in the upper lumbar spine) (L1-2-3)</td>
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<td>15:15-15:45 Refreshment Break*</td>
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<tr>
<td>15:45-17:15</td>
<td><strong>Lab 1, Rotation 2 – 6 Stations (3 Cadavers Prone, 3 Cadavers Lateral)</strong></td>
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<td></td>
<td><strong>Group 1</strong>                                    <strong>Lab 1B: 3 Stations, Cadavers Lateral Decubitus with C-arm</strong></td>
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<tr>
<td></td>
<td>Lateral Lumbar Approach (from right side), S2Ala-Ilium Screws</td>
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<tr>
<td></td>
<td>(Each group does two discs in the lower lumbar spine) (L3-4-5)</td>
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<tr>
<td></td>
<td><strong>Group 2</strong>                                    <strong>Lab 1A: 3 Stations, Cadavers Prone, without C-arm</strong></td>
</tr>
<tr>
<td></td>
<td>Thoracic-Lumbar-Ilium; Insertion of Hooks &amp; Pedicle Screws; Sacro-Pelvic Fixation. Open,</td>
</tr>
<tr>
<td></td>
<td>anatomy based (Right side of the spine only)</td>
</tr>
<tr>
<td>17:15-17:30</td>
<td>Change clothes (lab staff to turn cadavers to prone position for Lab 2 on Saturday)</td>
</tr>
<tr>
<td>17:30-18:30</td>
<td>Shuttle provided to Istanbul Marriott Hotel Asia</td>
</tr>
</tbody>
</table>

*Denotes Non-CME Session
Spine Deformity Solutions: A Hands-On Course Program

Saturday, May 11, 2019

07:30-08:00  Course participants shuttle to CASE

08:00-08:30  **Session 2: Video Demonstrations**  
Moderator: John R. Dimar, II, MD  
08:00-08:15  Posterior Osteotomies (PSO, PCO)  
  John R. Dimar, II, MD  
08:15-08:30  VCR  
  Munish Gupta, MD  

08:30-08:45  Proceed to lab and change clothes

08:45-10:30  **Lab 2 – 6 Stations (All Cadavers Prone)**  
Posterior Column Osteotomies, Ponte multiple levels between L1-L5, Smith-Peterson Osteotomy (SPO), Pedicle Subtraction Osteotomy (PSO) in the Lumbar Spine (Osteotomy at L3) and Vertebral Column Resection (VCR) of the Thoracic Spine (at T9). Participants share left/right side.

10:30-10:45  Refreshment Break* (lab staff to turn cadavers to supine position for Lab 3)

10:45-11:00  **Session 3: Video Demonstration**  
Anterior Approaches to the Cervical Spine & Cervicothoracic Junction  
Hossein Mehdian, MD, FRCS(Ed)

11:00-11:15  Proceed to lab

11:15-12:30  **Lab 3 - 6 Stations (All Cadavers Supine)**  
Anterior Approaches to the Cervical Spine and Cervicothoracic Junction

12:30-12:45  Lunch Break* – Boxed Lunches Available (lab staff to turn cadavers to prone position for lab 4)

12:45-13:30  **Session 4: Video Demonstrations**  
Moderator: Ahmet Alanay, MD  
12:45-13:00  Posterior Cervical Reconstruction from Occiput to T2  
  Ibrahim Obeid, MD  
13:00-13:15  C7 Osteotomy  
  Christopher I. Shaffrey, MD  
13:15-13:30  Final Remarks and Open Q&A Wrap-up Session  
  Ahmet Alanay, MD

13:30-13:45  Proceed to lab

13:45-15:15  **Lab 4 - 6 Stations (All Cadavers Prone)**  
Posterior Cervical Reconstruction from Occipital to T2 Deformity and Correction Techniques - C7PSO

15:15-15:30  Change clothes

15:30-16:30  Adjourn. Shuttle provided to Istanbul Marriott Hotel Asia

*Denotes Non-CME Session
Notes

Spine Deformity Solutions: A Hands-On Course

What did you learn?

How will you include the new things you learned in your practice?

What questions do you still have or wished you asked?
## Attendee Lab Assignments

<table>
<thead>
<tr>
<th>Group</th>
<th>Attendee</th>
<th>Lab Assignment</th>
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<tbody>
<tr>
<td></td>
<td>Name</td>
<td>Friday, May 10, 2019</td>
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<tr>
<td></td>
<td>First</td>
<td>Last</td>
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<tr>
<td>1</td>
<td>Mohammad</td>
<td>Abdoh</td>
</tr>
<tr>
<td>1</td>
<td>Mustafa</td>
<td>Altunen</td>
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<tr>
<td>1</td>
<td>Ashraf</td>
<td>Anbar</td>
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<tr>
<td>1</td>
<td>Giedrius</td>
<td>Bernotavicius</td>
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<tr>
<td>2</td>
<td>Pepijn</td>
<td>Bisseling</td>
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<tr>
<td>2</td>
<td>Su-Hyun</td>
<td>Cho</td>
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<td>Kyriakos</td>
<td>Giannoulis</td>
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<td>2</td>
<td>Thyago</td>
<td>Guirelle</td>
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<tr>
<td>3</td>
<td>Sherwan</td>
<td>Hamawandi</td>
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<tr>
<td>3</td>
<td>Adelin</td>
<td>Ivanov</td>
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<td>3</td>
<td>Mahir</td>
<td>Jasarevic</td>
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<tr>
<td>3</td>
<td>Rajandra</td>
<td>Kumar Karupiah</td>
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<td>4</td>
<td>Mohamed</td>
<td>Khattab</td>
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<tr>
<td>4</td>
<td>Ona</td>
<td>Lapteva</td>
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<td>Rajat</td>
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<td>Eduardo</td>
<td>Nunez Carrasco</td>
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<tr>
<td>5</td>
<td>Jaytsh</td>
<td>Pillay</td>
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<td>Popsuwashapa</td>
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<td>Vlaev</td>
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<td>Yablanski</td>
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<td>Zakzouk</td>
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<tr>
<td>6</td>
<td>Daniel</td>
<td>Zingor</td>
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</tbody>
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Center of Advanced Simulation and Education (CASE) - Acibadem University
### Lab Station Chart

**Faculty & Company Assignments**

<table>
<thead>
<tr>
<th>Station</th>
<th>Company 1</th>
<th>Company 2</th>
<th>Company 3</th>
<th>Company 4</th>
<th>Company 5</th>
<th>Company 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Medtronic</td>
<td>Berk/Hai</td>
<td>Berk/Hai</td>
<td>Ruf/Enercan</td>
<td>Dimar/Hamzaoglu</td>
<td>Alanay/Mardjetko</td>
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<td>Yazici/Sanchez Perez-Grueso</td>
<td>Yazici/Sanchez Perez-Grueso</td>
<td>Senkoylu/Alanay</td>
<td>Senkoylu/Castelein</td>
<td>Senkoylu/Yazici</td>
<td>Senkoylu/Castelein</td>
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<tr>
<td>2</td>
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<td>Berk/Hai</td>
<td>Berk/Hai</td>
<td>Ruf/Enercan</td>
<td>Dimar/Hamzaoglu</td>
<td>Alanay/Mardjetko</td>
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<td>Yazici/Sanchez Perez-Grueso</td>
<td>Yazici/Sanchez Perez-Grueso</td>
<td>Senkoylu/Alanay</td>
<td>Senkoylu/Castelein</td>
<td>Senkoylu/Yazici</td>
<td>Senkoylu/Castelein</td>
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<tr>
<td>3</td>
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<td>Berk/Hai</td>
<td>Berk/Hai</td>
<td>Ruf/Enercan</td>
<td>Dimar/Hamzaoglu</td>
<td>Alanay/Mardjetko</td>
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<td>Senkoylu/Obeid</td>
<td>Senkoylu/Castelein</td>
<td>Senkoylu/Castelein</td>
<td>Senkoylu/Yazici</td>
<td>Senkoylu/Castelein</td>
<td>Senkoylu/Castelein</td>
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<tr>
<td>4</td>
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<td>Berk/Hai</td>
<td>Berk/Hai</td>
<td>Ruf/Enercan</td>
<td>Dimar/Hamzaoglu</td>
<td>Alanay/Mardjetko</td>
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<td>Cheung/Castelein</td>
<td>Cheung/Hamzaoglu</td>
<td>Cheung/Hamzaoglu</td>
<td>Berk/Sanchez Perez-Grueso</td>
<td>Castelein/Clements</td>
<td>Hamzaoglu</td>
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<td>5</td>
<td>Globus Medical</td>
<td>Abelin-Genevois/Castelein</td>
<td>Abelin-Genevois/Shaffrey</td>
<td>Mehdian/Yilgor</td>
<td>Gupta/Mardjetko</td>
<td>Clements</td>
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<tr>
<td></td>
<td>Yilgor/Mardjetko</td>
<td>Yilgor/Gupta</td>
<td>Yilgor/Gupta</td>
<td>Abelin-Genevois/Castelein</td>
<td>Shaffrey/Mehdian</td>
<td>Gupta</td>
</tr>
</tbody>
</table>

* Lab 1 will have 2 rotations of participants

**Friday, May 10, 2019**
- 13:45-15:15 (Lab 1, Rotation 1)
- 15:45-17:15 (Lab 1, Rotation 2)

**Saturday, May 11, 2019**
- 8:45-10:30
- 11:15-12:30
- 13:45-15:15

- Thoracic-Lumbar-Ilium; Insertion of Hooks & Pedicle Screws; Sacro-Pelvic Fixation (Left side)
- Lateral Lumbar Approach (from left side); S2Aa-Ilium Screws; Sacro-Pelvic Fixation (Right side)
- Lateral Lumbar Approach (from right side); S2Aa-Ilium Screws; Sacro-Pelvic Fixation (Right side)
- Lateral Lumbar Approach (from right side); S2Aa-Ilium Screws; Sacro-Pelvic Fixation (Right side)
- Lateral Lumbar Approach (from right side); S2Aa-Ilium Screws; Sacro-Pelvic Fixation (Right side)
- Posterior Column Osteotomies, Ponte multiple levels (L1-L5), SPO, PSO at L3 and VCR at T9
- Anterior Approaches to the Cervical Spine & Cervicothoracic Junction
- Posterior Cervical Reconstruction from Occipital to T2 Deformity & Correction Techniques - C7PSO
About SRS

Founded in 1966, the Scoliosis Research Society is an organization of medical professionals and researchers dedicated to improving care for patients with spinal deformities. Over the years, it has grown from a group of 37 orthopaedic surgeons to an international organization of more than 1,300 health care professionals.

Mission Statement

The purpose of the Scoliosis Research Society is to foster the optimal care of all patients with spinal deformities.

Membership

SRS is open to orthopaedic surgeons, neurosurgeons, researchers and allied health professionals who have a practice that focuses on spinal deformity.

Active Fellowship (membership) requires the applicant to have fulfilled a five-year Candidate Fellowship and have a practice that is 20% or more in spinal deformity. Only Active Fellows may vote and hold elected positions within the Society.

Candidate Fellowship (membership) is open to orthopaedic surgeons, neurosurgeons and to researchers in all geographic locations who are willing to commit to a clinical practice which includes at least 20% spinal deformity. Candidate Fellows stay in that category for five years, during which time they must demonstrate their interest in spinal deformity and in the goals of the Scoliosis Research Society. Candidate Fellows may serve on SRS committees. After five years, those who complete all requirements are eligible to apply for Active Fellowship in the Society. Candidate Fellowship does not include the right to vote or hold office.

Associate Fellowship (membership) is for distinguished members of the medical profession including nurses, physician assistants, as well as orthopaedic surgeons, neurosurgeons, scientists, engineers and specialists who have made a significant contribution to scoliosis or related spinal deformities who do not wish to assume the full responsibilities of Active Fellowship. Associate Fellows may not vote or hold office, but may serve on committees.

Senior Candidate Fellowship (membership) is limited to senior surgeons, neurosurgeons and to non-physicians members of allied specialties. This candidacy is a path to SRS Active Fellowship. Senior surgeons have the opportunity to become Active Fellows of SRS in two years and not 5 years like the regular Candidate Fellowship track. They must have 20 years of experience (time spent with fellowship and training does not count), be a full professor, head of spine unit or chief of spine division, and clinical practice which includes 20% spinal deformity. After two years, those who complete all requirements are eligible to apply for Active Fellowship in the Society. Senior Candidate Fellowship does not include the right to vote or hold office.

Visit www.srs.org/professionals/membership for membership requirement details.

Programs And Activities

SRS is focused primarily on education and research that include the Annual Meeting, the International Meeting on Advanced Spine Techniques (IMAST), Worldwide Conferences, a Global Outreach Program, the Research Education Outreach (REO) Fund which provides grants for spine deformity research, and development of patient education materials.

Website Information

For the latest information on SRS meetings, programs, activities, and membership please visit www.srs.org. The SRS Website Committee works to ensure that the website information is accurate, accessible, and tailored for target audiences. Site content is varied and frequently uses graphics to stimulate ideas and interest. Content categories include information for medical professionals, patients/public, and SRS members. For more information, please visit the SRS website at www.srs.org.

Society Office Staff

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Social Media

Twitter: @srs_org
Facebook: ScoliosisResearchSociety
Instagram: @srs_org
LinkedIn: ScoliosisResearchSociety

Scoliosis Research Society

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Milwaukee, WI 53202
Phone: 414-289-9107
Fax: 414-276-3349
www.srs.org
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>06:30-11:00</td>
<td>Registration Open</td>
<td>Exhibit Hall - Yakut</td>
</tr>
<tr>
<td>07:00-08:00</td>
<td>Concurrent Case Based Discussions with Breakfast (Pediatric &amp; Adult)</td>
<td>Safr 2 and Safr 3</td>
</tr>
<tr>
<td>08:05-10:20</td>
<td>Session 3: AIS</td>
<td>Safr 1</td>
</tr>
<tr>
<td>10:05-10:25</td>
<td>Refreshment Break &amp; Exhibit Viewing</td>
<td>Exhibit Hall - Yakut</td>
</tr>
<tr>
<td>10:25-12:05</td>
<td>Session 4: AIS</td>
<td>Safr 1</td>
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<tr>
<td>12:05-13:15</td>
<td>Lunch Break</td>
<td>Exhibit Hall - Yakut</td>
</tr>
<tr>
<td>13:20-15:15</td>
<td>Session 5: Neuromuscular and Cervical Deformity</td>
<td>Safr 1</td>
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<tr>
<td>15:15-15:35</td>
<td>Refreshment Break &amp; Exhibit Viewing</td>
<td>Exhibit Hall - Yakut</td>
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<tr>
<td>15:35-17:30</td>
<td>Session 6: Adult and Degenerative Spinal Deformity</td>
<td>Safr 1</td>
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<tr>
<td>19:00-22:00</td>
<td>Welcome Reception*</td>
<td>Exhibit Hall - Yakut</td>
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**Thursday, May 9, 2019**

<table>
<thead>
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<tbody>
<tr>
<td>06:30-16:00</td>
<td>Registration Open</td>
<td>Exhibit Hall - Yakut</td>
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<tr>
<td>07:00-08:00</td>
<td>Concurrent Case Based Discussions with Breakfast (Pediatric &amp; Adult)</td>
<td>Safr 2 and Safr 3</td>
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<tr>
<td>08:05-10:20</td>
<td>Session 7: Kyphosis and Spondylolisthesis</td>
<td>Safr 1</td>
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<tr>
<td>10:20-10:40</td>
<td>Refreshment Break &amp; Exhibit Viewing</td>
<td>Exhibit Hall - Yakut</td>
</tr>
<tr>
<td>10:40-11:40</td>
<td>Session 8: Acquired Deformity</td>
<td>Safr 1</td>
</tr>
<tr>
<td>11:40-11:50</td>
<td>Final Remarks &amp; Post Course Quiz</td>
<td>Safr 1</td>
</tr>
<tr>
<td>11:50-12:00</td>
<td>Boxed Lunches Available for Those Attending the Hands-On Course</td>
<td>Exhibit Hall - Yakut</td>
</tr>
<tr>
<td>12:00-12:50</td>
<td>Transfer to CASE - Hands-On Course Attendees Only</td>
<td>Shuttle</td>
</tr>
<tr>
<td>13:00-13:30</td>
<td>Session 1: Video Demonstrations</td>
<td>Auditorium</td>
</tr>
<tr>
<td>13:30-13:45</td>
<td>Proceed to lab and change clothes</td>
<td>Locker Rooms</td>
</tr>
<tr>
<td>13:45-15:15</td>
<td>Lab 1, Rotation 1 – 6 Stations (3 Cadavers Prone, 3 Cadavers Lateral)</td>
<td>Lab</td>
</tr>
<tr>
<td>15:15-15:45</td>
<td>Refreshment Break</td>
<td>Lab Lobby</td>
</tr>
<tr>
<td>15:45-17:15</td>
<td>Lab 1, Rotation 2 – 6 Stations (3 Cadavers Prone, 3 Cadavers Lateral)</td>
<td>Lab</td>
</tr>
<tr>
<td>17:15-17:30</td>
<td>Change clothes (lab staff to turn cadavers to prone position)</td>
<td>Locker Rooms</td>
</tr>
<tr>
<td>17:30-18:30</td>
<td>Shuttle to Istanbul Marriott Hotel Asia</td>
<td>Shuttle</td>
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**Friday, May 10, 2019**

<table>
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<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>06:30-11:00</td>
<td>Registration Open</td>
<td>Exhibit Hall - Yakut</td>
</tr>
<tr>
<td>07:00-08:00</td>
<td>Concurrent Case Based Discussions with Breakfast (Pediatric &amp; Adult)</td>
<td>Safr 2 and Safr 3</td>
</tr>
<tr>
<td>08:05-10:20</td>
<td>Session 9: Clinical Orthopaedics and Pelvic Deformity</td>
<td>Safr 1</td>
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<tr>
<td>10:20-10:40</td>
<td>Refreshment Break &amp; Exhibit Viewing</td>
<td>Exhibit Hall - Yakut</td>
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<tr>
<td>10:40-11:40</td>
<td>Session 10: Trauma Deformity</td>
<td>Safr 1</td>
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<tr>
<td>11:40-11:50</td>
<td>Final Remarks &amp; Post Course Quiz</td>
<td>Safr 1</td>
</tr>
<tr>
<td>11:50-12:00</td>
<td>Boxed Lunches Available for Those Attending the Hands-On Course</td>
<td>Exhibit Hall - Yakut</td>
</tr>
<tr>
<td>12:00-12:50</td>
<td>Transfer to CASE - Hands-On Course Attendees Only</td>
<td>Shuttle</td>
</tr>
<tr>
<td>13:00-13:30</td>
<td>Session 1: Video Demonstrations</td>
<td>Auditorium</td>
</tr>
<tr>
<td>13:30-13:45</td>
<td>Proceed to lab and change clothes</td>
<td>Locker Rooms</td>
</tr>
<tr>
<td>13:45-15:15</td>
<td>Lab 1, Rotation 1 – 6 Stations (3 Cadavers Prone, 3 Cadavers Lateral)</td>
<td>Lab</td>
</tr>
<tr>
<td>15:15-15:45</td>
<td>Refreshment Break</td>
<td>Lab Lobby</td>
</tr>
<tr>
<td>15:45-17:15</td>
<td>Lab 1, Rotation 2 – 6 Stations (3 Cadavers Prone, 3 Cadavers Lateral)</td>
<td>Lab</td>
</tr>
<tr>
<td>17:15-17:30</td>
<td>Change clothes (lab staff to turn cadavers to prone position)</td>
<td>Locker Rooms</td>
</tr>
<tr>
<td>17:30-18:30</td>
<td>Shuttle to Istanbul Marriott Hotel Asia</td>
<td>Shuttle</td>
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**Saturday, May 11, 2019**

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<tbody>
<tr>
<td>07:30-08:00</td>
<td>Shuttle to CASE</td>
<td>Shuttle</td>
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<tr>
<td>08:00-08:30</td>
<td>Session 2: Video Demonstrations</td>
<td>Auditorium</td>
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<tr>
<td>08:30-08:45</td>
<td>Proceed to lab and change clothes</td>
<td>Locker Rooms</td>
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<tr>
<td>08:45-10:30</td>
<td>Lab 2 – 6 Stations (All Cadavers Prone)</td>
<td>Lab</td>
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<tr>
<td>10:30-10:45</td>
<td>Refreshment Break (lab staff to turn cadavers to supine position)</td>
<td>Lab Lobby</td>
</tr>
<tr>
<td>10:45-11:00</td>
<td>Session 3: Video Demonstration</td>
<td>Auditorium</td>
</tr>
<tr>
<td>11:00-11:15</td>
<td>Proceed to lab</td>
<td>Lab Lobby</td>
</tr>
<tr>
<td>11:15-12:30</td>
<td>Lab 3 - 6 Stations (All Cadavers Supine)</td>
<td>Lab</td>
</tr>
<tr>
<td>12:30-12:45</td>
<td>Lunch Break (lab staff to turn cadavers to prone position)</td>
<td>Lab Lobby</td>
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<tr>
<td>12:45-13:30</td>
<td>Session 4: Video Demonstrations</td>
<td>Auditorium</td>
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<tr>
<td>13:30-13:45</td>
<td>Proceed to lab</td>
<td>Lab Lobby</td>
</tr>
<tr>
<td>13:45-15:15</td>
<td>Lab 4 - 6 Stations (All Cadavers Prone)</td>
<td>Lab</td>
</tr>
<tr>
<td>15:15-15:30</td>
<td>Change clothes</td>
<td>Locker Rooms</td>
</tr>
<tr>
<td>15:30-16:30</td>
<td>Adjourn and shuttle to Istanbul Marriott Hotel Asia</td>
<td>Shuttle</td>
</tr>
</tbody>
</table>

Meeting Outline Key: [ ] = Current Concepts Course [ ] = Hands-On Course  *Denotes Non-CME Session