

Education

Davos Courses 2014

December 14–18, 2014 Davos, Switzerland

Final Program



You call it carving.
We call it quattro.

Welcome to the Home of quattro.



Audi
Vorsprung durch Technik



Contents

AOSpine—the leading global academic community for innovative education and research in spine care, inspiring lifelong learning and improving patients' lives.

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Answers for Life.



Welcome from the Course Director

Design your personal AOSpine Davos Courses 2014!

Dear Colleagues,

It is a great pleasure and privilege to welcome you to the premier educational event in the global spine calendar. An extremely experienced and motivated faculty is looking forward to interacting with you over the next few days. The modular course design means you can tailor your week according to your individual needs. The collegial nature of the sessions will allow for open exchange of opinions and experiences in dealing with complex clinical problems.

Several case presentations and discussions on best treatment options will be held in all modules. For every clinical case, there will also be an expert opinion lecture before the case presenter shares how the patient was actually treated. Comments on the solution and take home messages complete every case session. I would earnestly hope that you will feel sufficiently comfortable in challenging the perceived orthodoxy in management. Every module includes one hour to discuss cases from participants in the "Participants' cases session". The best participant case will receive a free registration for next year's Davos Courses.

In addition, this year's course features an enhanced Continuous Professional Development program in the middle of each day with an emphasis on procedural training. Each session is preceded by a keynote lecture and followed by practical "sawbones" workshops. The latter are supported by experienced table instructors. I am confident that these popular events will enhance your ability to treat a wide range of spinal disorders.

Davos is not just about education, as it is also an opportunity to meet old friends, renew acquaintances and enjoy the community aspects of AOSpine. There will be social events throughout the week which will offer focus points for social activities. However, you will also appreciate that the unique environs of Davos offers many other opportunities to relax and have fun.

I will be meeting many of you in the next few days but in the meantime, herzlich willkommen!

With very best wishes

A handwritten signature in blue ink, which appears to read "Mike Grevitt", is located below the text. The signature is fluid and cursive.

Mike Grevitt

Course Director Davos Courses 2014

Membership

Join the leading global community of spine surgeons

AOSpine community

AOSpine is the leading global academic community for innovative education and research in spine care, inspiring lifelong learning and improving patients' lives.

Your advantages

1. Benefit from lifelong learning opportunities.
2. Advance with our latest research discoveries.
3. Privileged networking opportunities within the largest global spine surgeon community.

Education and Career Development



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Scolisoft

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Journal of Neurosurgery: Spine



**-50% discount
for students and residents**

For further information on the latest benefits available to you, please visit www.aospine.org/membership
membership@aospine.org

We look forward to welcoming you to the AOSpine global community!

Course format and content

During four extraordinary days, our renowned international faculty will share and discuss with participants their most up-to-date knowledge and experiences in the field of spine surgery.

Attending the Davos Courses is an excellent opportunity to interact with world-renowned experts, teaching a range of spine topics at the highest level.



In addition, with the intention of enriching the learning experience of the growing number of participating spine specialists, the AOSpine Davos Courses 2014 will be hosted in even more spacious teaching rooms.

Following the success of 2013, the 2014 courses comprise ten different educational modules, from which participants select one per day (four in total) in order to create their own customized Davos Courses experience.

All modules are taught at a Masters level, which means they are highly interactive and fully case based. Each of the modules consists of five case sessions, including presentations, discussions, lectures and take-home messages for every case. All case sessions are moderated and taught by faculty members, who are experts in their respective fields and have attended AOSpine's extensive faculty development program.

Participants will experience a course format with a high faculty-to-participant ratio, focused on the most relevant, evidence-based information and current controversies in spinal surgery.

The Davos Courses are where expert knowledge is enhanced, lifelong professional networks are created and friendships are maintained.

Content

This educational event carries the AOSpine Curriculum logo. This indicates that the program, content, and objectives have been developed based on the Curriculum framework and that the event meets the implementation criteria defined by the AOSpine Education Commission (AOSEC). Each of the ten, day-long, educational modules focuses on a specific topic and has been developed to meet the educational needs of spine surgeons worldwide.

The course content is based on the latest updates and research within the field, and aims to enhance participants' expertise across several pathologies.






After attending the course, participants should be able to adapt and apply new concepts and techniques to their clinical environment, and subsequently improve patient care and outcomes.



Program guide

Program colors for spine session rooms

The AOSpine educational modules are taking place in the following rooms:

	Room Seehorn—House A, entry level Monday & Wednesday—Infection in Spine Surgery Tuesday & Thursday—Upper Cervical Spine
	Room Sanada 1—House C, entry level Monday & Wednesday—Preventing and Managing Complications Tuesday & Thursday—Solutions for Complex Cases
	Room Sanada 2—House C, entry level Monday & Wednesday—Lumbar Degenerative Disease Tuesday & Thursday—Cervical Degenerative Disease
	Room Aspen 1—House C, upper level Monday & Wednesday—Cervical Trauma Tuesday & Thursday—Thoracolumbar Trauma
	Room Aspen 2—House C, upper level Monday & Wednesday—Current Concepts in Deformity Treatment Tuesday & Thursday—The Aging Spine—Adult Deformity

Module overview

Monday 15 December 08:00—19:00	Tuesday 16 December 08:00—18:00	Wednesday 17 December 08:00—18:00	Thursday 18 December 08:00—14:30
Infection in Spine Surgery	Upper Cervical Spine	Infection in Spine Surgery	Upper Cervical Spine
Preventing and Managing Complications	Solutions for Complex Cases	Preventing and Managing Complications	Solutions for Complex Cases
Lumbar Degenerative Disease	Cervical Degenerative Disease	Lumbar Degenerative Disease	Cervical Degenerative Disease
Cervical Trauma	Thoracolumbar Trauma	Cervical Trauma	Thoracolumbar Trauma
Current Concepts in Deformity Treatment	The Aging Spine—Adult Deformity	Current Concepts in Deformity Treatment	The Aging Spine—Adult Deformity

Schedule at a glance

Sunday, December 14	Congress Center Room	Time
Registration	Main entrance	13.00-17.00
Opening ceremony and welcome cocktail (AO Foundation)	Davos	17.00-18.00

Monday, December 15		
AOSpine opening session	Sanada 1+2	08.00-09.00
Coffee break	Foyer C1	09.00-09.30
Scientific program	Session rooms	09.30-12.30
Break		12.30-13.00
Keynote lecture (including lunch)	Sanada 1+2	13.00-14.00
Workshops (Only pre-registered participants)	Chamonix & Foyer C2	14.00-16.00
Scientific program	Session rooms	16.00-19.00
AOSpine participants' night (social event)	Restaurant Extrablatt	19.00-22.00

Tuesday, December 16		
Scientific program	Session rooms	08.00-10.00
Coffee break	Foyer C1	10.00-10.30
Scientific program	Session rooms	10.30-12.30
Break		12.30-13.00
Keynote lecture (including lunch)	Sanada 1+2	13.00-14.00
Workshops (Only pre-registered participants)	Chamonix & Foyer C2	14.00-16.00
Scientific program	Session rooms	16.00-18.00
Crash Scene Investigation event by AUDI	Congress Center	18.30-20.00

Wednesday, December 17		
Scientific program	Session rooms	08.00-10.00
Coffee break	Foyer C1	10.00-10.30
Scientific program	Session rooms	10.30-12.30
Break		12.30-13.00
Keynote lecture (including lunch)	Sanada 1+2	13.00-14.00
Workshops (Only pre-registered participants)	Chamonix & Foyer C2	14.00-16.00
Scientific program	Session rooms	16.00-18.00
AO World Night (social event)	Congress Center	18.00-21.00

Thursday, December 18		
Scientific program	Session rooms	08.00-10.00
Coffee break	Foyer C1	10.00-10.30
Scientific program (including lunch)	Session rooms	10.30-14.30
Certificate pick-up	AOSpine Information Booth Foyer C1	14.30-15.30



Chairpersons and Educational Advisors

Course Director

Michael Grevitt

Nottingham University Hospital NHS Trust
Nottingham, UK

Chairpersons

Educational Advisors

Preventing and Managing Complications

Solutions for Complex Cases



Teija Lund

ORTON Orthopaedic Hospital
Helsinki, Finland



Bernhard Meyer

Klinikum rechts der Isar
Munich, Germany

Cervical Trauma

Thoracolumbar Trauma



Amer Aziz

Ghurki Trust Teaching Hospital
Lahore, Pakistan



Imad Ahmad

Mediclinic City Hospital
Dubai, UAE

Current Concepts in Deformity Treatment

The Aging Spine—Adult Deformity



Darrel Brodke

University of Utah
Salt Lake City, USA



Theodore Choma

University of Missouri
Columbia, USA

Infection in Spine Surgery

Upper Cervical Spine



Marcelo Gruenberg

Hospital Italiano
Buenos Aires, Argentina



Osmar Moraes

Hospital Santa Marcelina
São Paulo, Brazil

Lumbar Degenerative Disease

Cervical Degenerative Disease



YH Yau








































Royal Adelaide Hospital
Adelaide, Australia



Chung Chek Wong

Sarawak General Hospital
Kuching, Malaysia

Course faculty

Jean-Jaques Abitbol	 USA	John Hutchinson	 United Kingdom
Emre Acaroglu	 Turkey	Frank Kandziora	 Germany
Abdulaziz Al-Mutair	 Kuwait	Yoshiharu Kawaguchi	 Japan
Abdulrazzaq Alobaid	 Kuwait	Eung-Ha Kim	 Korea South
Haluk Berk	 Turkey	Zdenek Klezl	 United Kingdom
Bronek Boszczyk	 United Kingdom	Eric Klineberg	 USA
Roberto Chapa	 Mexico	Gomatam Vijay Kumar	 India
Thomas Chen	 USA	Claudio Lamartina	 Italy
Robert Crawford	 United Kingdom	John Liu	 USA
Bharat Dave	 India	Robert Meves	 Brazil
John DeVine	 USA	Colin Nnadi	 United Kingdom
John Duff	 Switzerland	Luca Papavero	 Germany
Robert Dunn	 South Africa	Nasir Quraishi	 United Kingdom
Youssry El Hawary	 Egypt	Shanmuganathan Rajasekaran	 India
Mohammad El-Sharkawi	 Egypt	Rolf Riise	 Norway
Richard Emery	 Australia	Alexandre Sadao Iutaka	 Brazil
Juan Emmerich	 Argentina	Klaus Schnake	 Germany
Jeremy Fairbank	 United Kingdom	Philip Sell	 United Kingdom
Michael Fehlings	 Canada	Ghassan Skaf	 Lebanon
John France	 USA	Claudius Thomé	 Austria
Ian Harding	 United Kingdom	Carlos Tucci	 Brazil
Roger Härtl	 USA	Pablo Vela	 Colombia
Philip Horsting	 Netherlands	Peter Vajkoczy	 Germany
Patrick Hsieh	 USA	Luiz Vialle	 Brazil



Teija Lund—Chairperson
ORTON Orthopaedic Hospital
Helsinki, Finland

Modules

Preventing and Managing Complications

Solutions for Complex Cases

What to expect

Teija Lund says, "The two modules ('Preventing and Managing Complications', and 'Solutions to Complex Cases') are different from the other modules in Davos. They are not limited to certain areas of spine or certain pathologies. Rather, they use real-life patient cases to illustrate challenging clinical situations in different spine pathologies. Both modules will emphasize how to select treatment strategies in complex clinical situations, and how to anticipate, avoid, and deal with possible problems resulting from our decisions."

Preventing and Managing Complications

Featured cases on Monday & Wednesday:

- Overlooked cervical spine fracture in ankylosing spondylitis
- Cervical deformity after thoraco-lumbosacral fixation
- Implant failure in an osteoporotic spine
- Adult deformity in a Parkinsons patient
- Adult deformity—proximal junctional failure with neurology

Learning Objectives:

- Practice sound clinical judgment based on available information
- Evaluate risks and benefits of different treatment strategies
- Recognize potential pitfalls in challenging clinical situations
- Adjust clinical decision making in unanticipated situations
- Identify early signs of complications and react accordingly

Solutions for Complex Cases

Featured cases on Tuesday & Thursday:

- Basilar invagination in an OI patient
- C2/3 chordoma
- Congenital deformity with a complication cascade
- Late infection in an instrumented spine
- LBP in a multioperated patient

Learning Objectives:

- Identify key components of individual treatment decisions
- Select treatment strategies for complex clinical cases
- Anticipate, avoid, and deal with problems around complex clinical cases
- Analyze treatment results with reference to realistic expectations
- Reflect on clinical experience with a goal of improving practice

Outlining the benefits

Lund explains, "The two modules offer participants and faculty an opportunity to apply their own experience and expertise to challenging clinical situations. The modules encourage lateral thinking, reflection on one's own clinical practice policies, and critical evaluation of personal decisions and actions. I trust that after attending these modules, our mindsets will be even more directed towards sound clinical judgment, balanced evaluation of available treatment strategies, and timely interference when problems arise."



Amer Aziz—Chairperson
Ghurki Trust Teaching Hospital
Lahore, Pakistan

Modules

Cervical Trauma

Thoracolumbar Trauma

What to expect

Providing an insight into his modules, Amer Aziz says, "Trauma is one of the most common diseases of daily practice, which every spine surgeon should update themselves on. Through the module on 'Cervical Trauma', we will hold discussions on the Upper Cervical Spine Trauma and the Lower Cervical Spine Trauma. The module on 'Thoracolumbar Trauma' will include subtopics dealing with: general management of patients, nonoperative treatment, and surgical treatment (open vs minimally invasive spine surgery)."

Cervical Trauma

Featured cases on Monday & Wednesday:

- Atlas axis (C1/2) fractures
- C2 fracture/odontoid fracture
- Occipito cervical fusion in trauma
- Sub-axial cervical spine fracture with failed implant
- Pediatric cervical spine injury without radiology

Learning Objectives:

- Discuss, appraise, and validate the management options for cervical spine trauma according to AOSpine principles
- Analyze all information from the history, examination, and investigation of the patient
- Synthesize all pieces of information and their relationships into a meaningful whole
- Apply available evidence on cervical spine trauma

Thoracolumbar Trauma

Featured cases on Tuesday & Thursday:

- Nonoperative treatment of thoracolumbar fractures
- Burst thoracolumbar fracture (type A3 & A4)
- Type C thoracolumbar fractures
- Chance fractures
- Thoracolumbar fractures in osteoporotic bone

Learning Objectives:

- Discuss, appraise, and validate the management options for thoracolumbar spine trauma according to AOSpine principles
- Analyze all information from the history, examination, and investigation of the patient
- Synthesize all pieces of information and their relationships into a meaningful whole
- Apply available evidence on thoracolumbar spine trauma

Outlining the benefits

Aziz elaborates, "The modules are created with application and analysis in mind. Real life scenarios will be discussed and evidence-based practice will be promoted. World-renowned, experienced faculty will be available, and an excellent learning environment will be provided."



Darrel Brodke—Chairperson
University of Utah
Salt Lake City, USA

Modules

Current Concepts in Deformity Treatment

The Aging Spine—Adult Deformity

What to expect

Darrel Brodke describes, "With a rapidly aging patient population, we are increasingly confronted with challenges in the treatment of spinal disorders on the aging spine, from low energy trauma to complex deformity and failure after standard surgical treatments. Likewise, in adult deformity, the increasing complexity of the surgical interventions raises the risk and frequency of complications and associated challenges. There are also concerns for cost and value in these surgical treatments."

Current Concepts in Deformity Treatment The Aging Spine—Adult Deformity

Featured cases on Monday & Wednesday:

- Adult degenerative deformity
- Proximal junctional kyphosis after fusion
- Early onset scoliosis in a 4-year-old with osteogenesis imperfecta
- Adult progression of pediatric scoliosis and spondylolisthesis
- Spondyloptosis with high grade spondylolisthesis

Learning Objectives:

- Classify the type and severity of deformity using calculated results of spinal and pelvic parameters compared with predicted normal values
- Determine the most appropriate spinal construct based on biomechanical principles for deformity correction
- Formulate a sequential diagnosis and optimal medical and surgical management for the patient with spinal deformity

Featured cases on Tuesday & Thursday:

- Surgical nuances in the aging spine
- S1/2 fracture after fusion with deformity
- Incomplete correction with minimally invasive techniques
- Failed fixation and complications of the aging spine
- Cervical spine osteotomies and deformity correction

Learning Objectives:

- Screen for osseous and muscular conditions commonly associated with the aging spine and adult spinal deformity
- Determine the most appropriate exercise modality and conservative management in the elderly patient
- Formulate a surgical plan for patients with medical comorbidities associated with advanced age
- Develop a management plan for common medical complications associated with spinal surgery in the elderly population

Outlining the benefits

Brodke says, "Using case-based presentations, a panel of experts will lead the discussions on advanced techniques for treating deformities of the spine. We will cover topics including indications for performing spinal deformity surgeries, techniques used for correcting spinal deformities, and the biomechanics as it relates to the correction of spinal deformities."



Marcelo Gruenberg—Chairperson
Hospital Italiano
Buenos Aires, Argentina

Modules

Infection in Spine Surgery

Upper Cervical Spine

What to expect

Marcelo Gruenberg summarizes, "These two modules cover the most common and controversial topics with regard to spine infection and upper cervical pathology. In both these modules, participants will be presented with difficult real-life situations that will be discussed together with experienced faculty members. The aim is to improve patient treatment options and avoid complications."

Infection in Spine Surgery

Featured Cases Monday:

- Post-operative double level discitis
- Infection after kyphoplasty
- Post ACDF infection
- L3/4 discitis
- Late low grade infection

Featured Cases Wednesday:

- Infection after AxiaLIF
- Lumbar spondylodiscitis in an elderly patient
- Spine TB infection
- Late infection after lumbar revision instrumentation
- Cervical discitis and epidural abscess

Upper Cervical Spine

Featured Cases Tuesday:

- Late deformity at C1/2
- Screw complication after anterior odontoid stabilization
- C2 benign tumor
- Complex C1/2 fracture
- AR axial and sub-axial combined compromise

Featured Cases Thursday:

- Upper cervical epidural abscess
- Failed C2 screw fix for an odontoid fracture
- Late diagnosis of rotatory C1/2 dislocation in children
- Basilar impression
- C2 aggressive benign tumor in a young patient

Learning Objectives:

- Recognize the key elements for an early diagnosis in spondylodiscitis
- Identify treatment options and the benefits and limitations of each one
- Select the surgical technique via an individualized algorithm for patients with spinal infection
- Identify relevant differences when treating specific spondylodiscitis
- Diagnose and treat postoperative infection
- The module will cover topics such as: strategies to lower the infection rates, tips for an early postoperative infection diagnosis, treatment differences when dealing with specific infections, current alternatives to treat postoperative infections.

Learning Objectives:

- Apply an appropriate differential diagnosis and diagnose each patient's specific lesion
- Recognize tips and tricks for the approach to the upper cervical spine
- Select the best instrumentation technique considering the specific risks at the site
- Manage the complications of surgical treatment and late onset of the pathology
- The module will cover topics such as: atlantoaxial instability in RA, sequelae of the most common undertreated fractures, approach options for this complex zone, fixations other than those of the 'classic' type, and avoiding vascular and neurological complications.

Outlining the benefits

Gruenberg says, "The case-based format presents the participants with issues they have to solve in their daily practices. The open interaction facilitates a discussion that is focused on the more relevant and practical aspects for the surgeons."



YH Yau—Chairperson
Royal Adelaide Hospital
Adelaide, Australia

Modules

Lumbar Degenerative Disease

Cervical Degenerative Disease

What to expect

YH Yau says, "Degenerative conditions of the cervical and lumbar spine represent the largest proportion of clinical presentations to a spinal specialist. Attending these modules will facilitate the development and consolidation of the participants' own strategies in managing the majority of their patients."

Lumbar Degenerative Disease

Featured cases on Monday & Wednesday:

- Axial low back pain
- Recurrent lumbar disc prolapse
- Lumbar degenerative spondylolisthesis
- Degenerative scoliosis
- Complications in lumbar surgery

Learning Objectives:

- Formulate a management plan for axial low back pain
- Evaluate the surgical decision making for recurrent lumbar disc prolapse
- Explain the rationale for indirect decompression in lumbar degenerative spondylolisthesis
- Integrate lumbar sagittal balance in the treatment of degenerative scoliosis
- Formulate and apply strategies to manage common complications in lumbar spine surgery
- The module will cover topics such as: axial low back pain, recurrent lumbar disc prolapse, lumbar degenerative spondylolisthesis, degenerative scoliosis, and managing complications in lumbar surgery.

Cervical Degenerative Disease

Featured cases on Tuesday & Thursday:

- Axial neck pain
- Spondylotic cervical radiculopathy
- Spondylotic cervical myelopathy
- Ossification of the posterior longitudinal ligament in the cervical spine
- Complications in cervical surgery

Learning Objectives:

- Determine the sources of cervical axial pain and appropriate treatments
- Describe the assessment and treatment options for cervical radiculopathy
- Discuss anterior versus posterior decompression in cervical myelopathy
- Evaluate surgical treatment options for cervical OPLL
- Formulate and apply strategies to manage common complications in cervical spine surgery
- The module will cover topics such as: axial neck pain, options for cervical radiculopathy, surgical approaches for cervical myelopathy, OPLL, and managing complications of cervical surgery.

Outlining the benefits

Yau points out, "A case-based approach provides relevance to the participant's own clinical practice and promotes interactive learning. In essence, the Davos experience brings together views and teachings from global experts; and the learning can be adapted to the locations of the individual participants."

Venue



Congress Center Davos

Talstrasse 49A
 7270 Davos Platz
 Switzerland
 Phone: +41 81 414 62 00
 Fax: +41 81 414 62 29

AOSpine Registration & Welcome Desk—opening hours

AOSpine registration for faculty and participants
 Congress Center, main entrance

Sunday, December 14 13:00–17:00

Information desk—opening hours

General information/registration for special events
 Congress Center, main entrance

Sunday 15:00–17:00
 Monday to Thursday 07:45–19:00

AOSpine Information Desk—opening hours

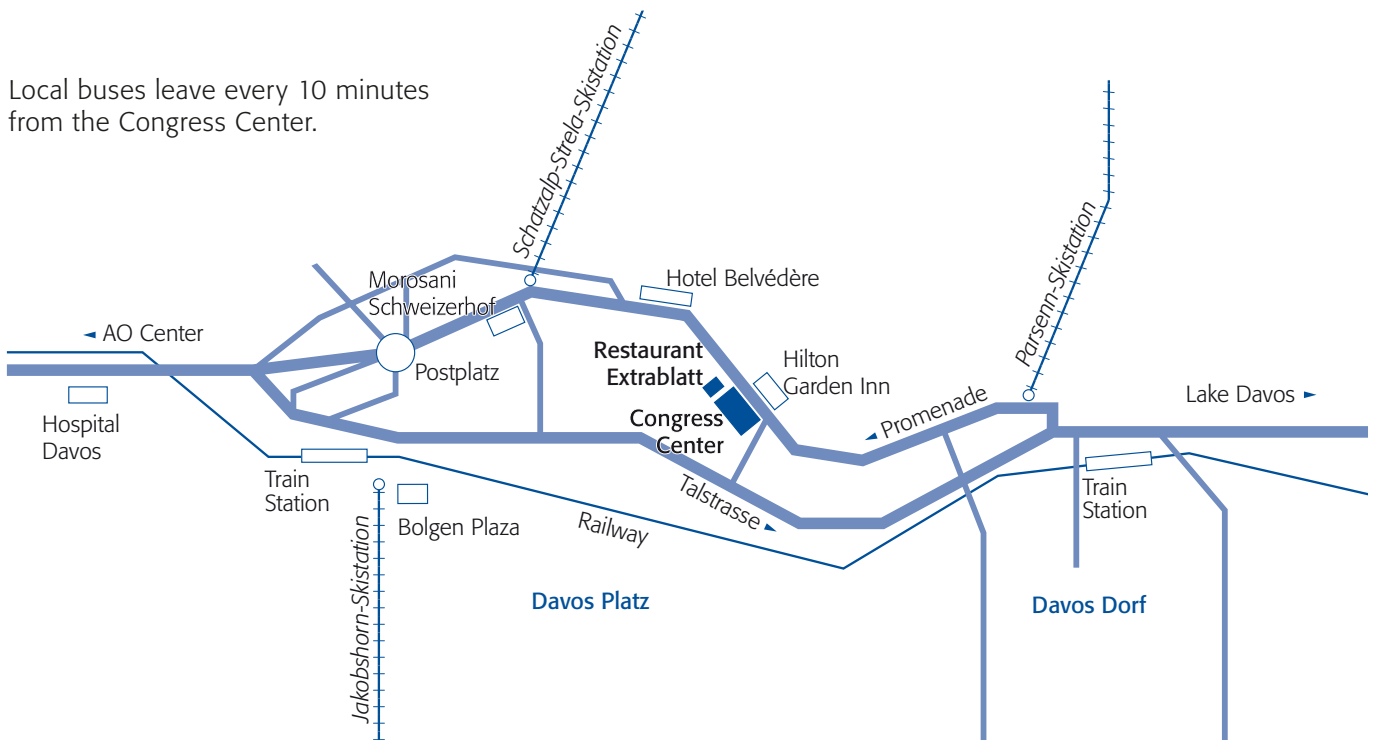
Congress Center, Foyer C1

Monday, December 15 07:30–19:00
 Tuesday, December 16 07:30–18:00
 Wednesday, December 17 07:30–18:00
 Thursday, December 18 07:30–16:00

AO World and Industry Exhibition—opening hours

Sunday 12:00–17:00
 Monday to Friday 09:00–18:00

Local buses leave every 10 minutes from the Congress Center.



Course information

Course fee

AOSpine members	CHF 2,700.–
Non members	CHF 3,000.–

The course fee includes a conference bag with documentation, a welcome reception, lunches, coffee breaks, participant "get-together" event, AO World Night and your course certificate.

Accreditation

AOSpine Davos Courses are accredited for 24 continuing medical education (CME) credit points by the European Accreditation Council for Continuing Medical Education (EACCME).

Course certificate

Please claim your certificates at the AOSpine information desk in Foyer C1 on Thursday, December 18 between 14.30–15.30.

Evaluation guidelines

All AOSpine Courses apply an evaluation process that helps to ensure that the participants' education needs are continuously met.

Intellectual property

Course materials, presentations, and case studies are the intellectual property of the course faculty. All rights are reserved.

Recording, photographing, or copying of lectures, practical exercises, case discussions, or any course materials is strictly forbidden. Participants violating intellectual property will be dismissed.



The AO Foundation reserves the right to film, photograph, and audio record during their events. Participants must understand that in this context they may appear in these recorded materials. The AO Foundation assumes participants agree that these recorded materials may be used for AO marketing and other purposes, and made available to the public.

Security

There is a security check at the entrance of the building. Wearing your course name badge is compulsory during your time in the congress center.

No insurance

The course organization does not take out insurance to cover any individual against accidents, thefts or other risks.

Mobile phone use

Mobile phone use is not allowed in the lecture halls and in other rooms during educational activities. Please be considerate of others by turning off your mobile phone.

Dress code

Course: casual
Davos is a mountain town. Warm clothes and suitable shoes are advisable.

HRG travel office

Flight confirmations or re-bookings can be done during coffee breaks. The HRG travel office is located at the main entrance of the Congress Center.

AOSpine social event

The participant's "get-together" will take place in Congress Center restaurant "Extrablatt" on Monday December 15, immediately after the scientific sessions.

AO Foundation social event

AO World night will take place at the Congress Center on Wednesday December 17, and presents an opportunity for participants to interact with participants and faculty members from other clinical divisions.

Picture Gallery

Check out aodavoscourses.org for a daily selection of pictures from the Davos Courses 2014, the best from last year's courses, and a selection of photographs from the first ever AO Davos Courses.

Congress Center Floorplan

House C—Upper level

Room Aspen I

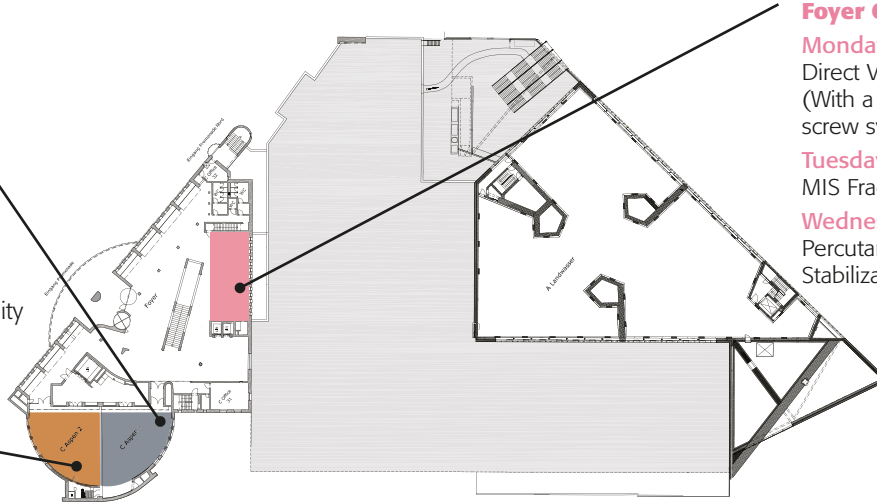
Monday & Wednesday
Cervical Trauma
Tuesday & Thursday
Thoracolumbar Trauma

Room Aspen II

Monday & Wednesday
Current Concepts in Deformity Treatment
Tuesday & Thursday
The Aging Spine—Adult Deformity

Workshops—House C Foyer C2

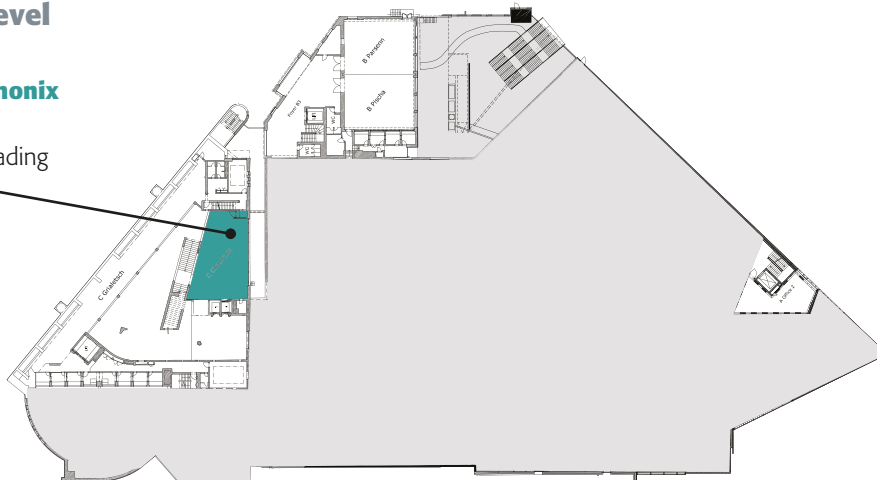
Monday
Direct Vertebral Rotation—
(With a toploading pedicle screw system)
Tuesday
MIS Fracture Reduction
Wednesday
Percutaneous Pedicle Screw Stabilization



House C—Middle level

Workshops—Cafe Chamonix

Monday
Translation—(With a sideloading pedicle screw system)
Tuesday
Open Fracture Reduction
Wednesday
Vertebral Body Stenting



House C—Entry level

Room Sanada I

Monday & Wednesday
Preventing and Managing Complications
Tuesday & Thursday
Solutions for Complex Cases

Room Sanada II

Monday & Wednesday
Lumbar Degenerative Disease
Tuesday & Thursday
Cervical Degenerative Disease

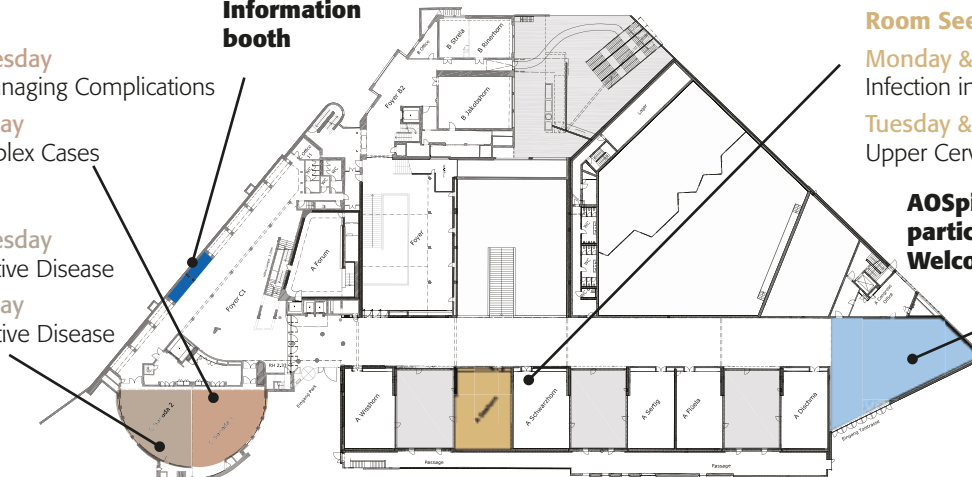
AOSpine Information booth

House A—Entry level

Room Seehorn

Monday & Wednesday
Infection in Spine Surgery
Tuesday & Thursday
Upper Cervical Spine

AOSpine faculty and participant registration Welcome Desk



Keynote lectures

Monday 15 December, 13.00–14.00 House C, Sanada 1+2

Keynote lecture: Deformity Correction - Technique Pearls and Complication Avoidance

5 min Introduction - Darrel Brodke

20 min Pediatric Deformity - John Hutchinson

20 min Adult Deformity - Ted Choma

15 min Q&A and Panel Discussion - Darrel Brodke

Tuesday 16 December, 13.00–14.00 House C, Sanada 1+2

Keynote lecture: Thoracolumbar Trauma

12 min TL Trauma Surgery Reference launch - Michael Grevitt, Luiz Vialle, Frank Kandziora

10 min Do we need to operate on TL trauma? - Michael Grevitt

10 min When anterior/MISS surgery? - Frank Kandziora

10 min When posterior short fixation? - Luiz Vialle

10 min How to choose between Anterior and Posterior? - Shanmuganathan Rajasekaran

8min Discussion

Wednesday 17 December, 13.00–14.00 House C, Sanada 1+2

Keynote lecture: Helping our patients with Minimally Invasive Spine Surgery

5 min Introduction - Klaus Schnake

15 min Evidence for Minimally Invasive Spine Surgery - Roger Härtl

15 min Tips and tricks for degenerative lumbar MIS - Jean-Jacques Abitbol

15 min Tips and tricks for MIS in infections - Claudius Thomé

10 min Q&A and discussion

Please note that lunch is served during these Keynote lectures in the lecture rooms.

Workshops

Monday December 15, 14.00-15.55

Deformity Correction Techniques:

Translation—(With a sideload pedicle screw system)

14.00-14.55 and repeated 15.00-15.55

House C, Cafe Chamonix

Chairperson: Robert Crawford

Table instructors: Jeremy Fairbank, Abdulaziz Al-Mutair, Ian Harding, Pablo Vela

Direct Vertebral Rotation—(With a toploding pedicle screw system)

14.00-14.55 and repeated 15.00-15.55

House C, Foyer C2

Chairperson: John Hutchinson

Table instructors: Darrel Brodke, Philip Horsting, Patrick Hsieh, John DeVine

Tuesday December 16, 14.00-15.55

Thoracolumbar Trauma Techniques:

Open Fracture Reduction

14.00-14.55 and repeated 15.00-15.55

House C, Cafe Chamonix

Chairperson: Luiz Vialle

Table instructors: Claudio Lamartina, Robert Dunn, Alexandre Sadao Iutaka, John France

MIS Fracture Reduction

14.00-14.55 and repeated 15.00-15.55

House C, Foyer C2

Chairperson: Frank Kandziora

Table instructors: Zdenek Klezl, Richard Emery, Shanmuganathan Rajasekaran, Robert Meves

Wednesday December 17, 14.00-15.55

New Concepts with MIS Techniques:

Vertebral Body Stenting

14.00-14.55 and repeated 15.00-15.55

House C, Cafe Chamonix

Chairperson: Bronek Boszczyk

Table instructors: Abdulrazzaq Alobaid, Carlos Tucci, Nasir Quraishi, Zdenek Klezl

Percutaneous Pedicle Screw Stabilization

14.00-14.55 and repeated 15.00-15.55

House C, Foyer C2

Chairperson: Klaus Schnake

Table instructors: Claudius Thomé, Roger Härtl, Jean-Jacques Abitbol, Youssry El Hawary

Monday Morning Sessions

Monday 15 December
Morning sessions
(Day 1)

Infection in Spine Surgery Room Seehorn—House A

Start	End	Title	Moderators/Faculty
08:00	09:00	AOSpine opening session in room Sanada 1+2	
09:00	09:30	Coffee break in House C, Foyer C1	
Module program begins:			
09:30	10:30	Case: Postoperative double level discitis	Shanmuganathan Rajasekaran
09:30	09:35	Case presentation	Shanmuganathan Rajasekaran
09:35	09:55	Group discussion	All Faculty Members
09:55	10:10	Group presentations	All Faculty Members
10:10	10:15	Expert opinion and lecture	Bronek Boszczyk
10:15	10:20	Case solution	Shanmuganathan Rajasekaran
10:20	10:25	Summary of findings & Take home messages	Shanmuganathan Rajasekaran
10:25	10:30	Evaluation	
10:30	11:30	Case: Infection after kyphoplasty	Pablo Vela
10:30	10:35	Case presentation	Klaus Schnake
10:35	10:55	Group discussion	All Faculty Members
10:55	11:10	Group presentations	All Faculty Members
11:10	11:15	Expert opinion and lecture	Alexandre Sadao Iutaka
11:15	11:20	Case solution	Klaus Schnake
11:20	11:25	Summary of findings & Take home messages	Pablo Vela
11:25	11:30	Evaluation	
11:30	12:30	Case: Post ACDF infection	Alexandre Sadao Iutaka
11:30	11:35	Case presentation	Ghassan Skaf
11:35	11:55	Group discussion	All Faculty Members
11:55	12:10	Group presentations	All Faculty Members
12:10	12:15	Expert opinion and lecture	Pablo Vela
12:15	12:20	Case solution	Ghassan Skaf
12:20	12:25	Summary of findings & Take home messages	Alexandre Sadao Iutaka
12:25	12:30	Evaluation	
12:30	13:00	Break—Program starts again at 13.00	

Preventing and Managing Complications Room Sanada 1—House C

Start	End	Title	Moderators/Faculty
08:00	09:00	AOSpine opening session in room Sanada 1+2	
09:00	09:30	Coffee break in House C, Foyer C1	
Module program begins:			
09:30	10:30	Case: Overlooked cervical spine fracture in ankylosing spondylitis	Peter Vajkoczy
09:30	09:35	Case presentation	Michael Fehlings
09:35	09:55	Group discussion	All Faculty Members
09:55	10:10	Group presentations	All Faculty Members
10:10	10:15	Expert opinion and lecture	Claudius Thomé
10:15	10:20	Case solution	Michael Fehlings
10:20	10:25	Summary of findings & Take home messages	Peter Vajkoczy
10:25	10:30	Evaluation	
10:30	11:30	Case: Cervical deformity after thoraco-lumbosacral fixation	Gomatam Vijay Kumar
10:30	10:35	Case presentation	Peter Vajkoczy
10:35	10:55	Debate: Does sagittal balance correction solve all problems	Haluk Berk(yes) Bernhard Meyer(no)
10:55	11:10	Discussion	All Faculty Members
11:10	11:15	Expert opinion and lecture	John Duff
11:15	11:20	Case solution	Peter Vajkoczy
11:20	11:25	Summary of findings & Take home messages	Gomatam Vijay Kumar
11:25	11:30	Evaluation	
11:30	12:30	Case: Implant failure in an osteoporotic spine	Michael Fehlings
11:30	11:35	Case presentation	John Duff
11:35	11:55	Faculty panel	Haluk Berk, Gomatam Vijay Kumar, Emre Acaroglu, Youssry Elhawary
11:55	12:10	Discussion	All Faculty Members
12:10	12:15	Expert opinion and lecture	Robert Dunn
12:15	12:20	Case solution	John Duff
12:20	12:25	Summary of findings & Take home messages	Michael Fehlings
12:25	12:30	Evaluation	
12:30	13:00	Break—Program starts again at 13.00	

Lumbar Degenerative Disease Room Sanada 2—House C

Start End Title Moderators/Faculty
08:00 09:00 AOSpine opening session in room Sanada 1+2

09:00 09:30 Coffee break in House C, Foyer C1

Module program begins:

09:30	10:30	Case: Axial low back pain	YH Yau
09:30	09:35	Case presentation	Yoshiharu Kawaguchi
09:35	09:55	Group discussion	All Faculty Members
09:55	10:10	Group presentations	All Faculty Members
10:10	10:15	Expert opinion and lecture	Richard Emery
10:15	10:20	Case solution	Yoshiharu Kawaguchi
10:20	10:25	Summary of findings & Take home messages	Roberto Chapa
10:25	10:30	Evaluation	
10:30	11:30	Case: Recurrent lumbar disc prolapse	Roberto Chapa
10:30	10:35	Case presentation	Eung Ha Kim
10:35	10:55	Group discussion	All Faculty Members
10:55	11:10	Group presentations	All Faculty Members
11:10	11:15	Expert opinion and lecture	Bharat Dave
11:15	11:20	Case solution	Eung Ha Kim
11:20	11:25	Summary of findings & Take home messages	Robert Meves
11:25	11:30	Evaluation	
11:30	12:30	Case: Lumbar degenerative spondylolisthesis	Robert Meves
11:30	11:35	Case presentation	John Liu
11:35	11:55	Group discussion	All Faculty Members
11:55	12:10	Group presentations	All Faculty Members
12:10	12:15	Expert opinion and lecture	Philip Horsting
12:15	12:20	Case solution	John Liu
12:20	12:25	Summary of findings & Take home messages	Richard Emery
12:25	12:30	Evaluation	

12:30 13:00 Break—Program starts again at 13.00

Cervical Trauma Room Aspen 1—House C

Start End Title Moderators/Faculty
08:00 09:00 AOSpine opening session in room Sanada 1+2

09:00 09:30 Coffee break in House C, Foyer C1

Module program begins:

09:30	10:30	Case: Atlas axis (C1/2) fractures	Luiz Vialle
09:30	09:35	Case presentation	Frank Kandziora
09:35	09:55	Group discussion	All Faculty Members
09:55	10:10	Group presentations	All Faculty Members
10:10	10:15	Expert opinion and lecture	Zdenek Klezl
10:15	10:20	Case solution	Frank Kandziora
10:20	10:25	Summary of findings & Take home messages	Frank Kandziora
10:25	10:30	Evaluation	
10:30	11:30	Case: C2 fracture/odontoid fracture	Abdulaziz Al-Mutair
10:30	10:35	Case presentation	Roger Härtl
10:35	10:55	Group discussion	All Faculty Members
10:55	11:10	Group presentations	All Faculty Members
11:10	11:15	Expert opinion and lecture	Thomas Chen
11:15	11:20	Case solution	Roger Härtl
11:20	11:25	Summary of findings & Take home messages	Mohammad El-Sharkawi
11:25	11:30	Evaluation	
11:30	12:30	Case: Occipito cervical fusion in trauma	Robert Crawford
11:30	11:35	Case presentation	Luiz Vialle
11:35	11:55	Group discussion	All Faculty Members
11:55	12:10	Group presentations	All Faculty Members
12:10	12:15	Expert opinion and lecture	Robert Crawford
12:15	12:20	Case solution	Luiz Vialle
12:20	12:25	Summary of findings & Take home messages	Nasir Quraishi
12:25	12:30	Evaluation	

12:30 13:00 Break—Program starts again at 13.00

Current Concepts in Deformity Treatment Room Aspen 2—House C

Start End Title Moderators/Faculty
08:00 09:00 AOSpine opening session in room Sanada 1+2

09:00 09:30 Coffee break in House C, Foyer C1

Module program begins:

09:30	10:30	Case: Adult degenerative deformity	John DeVine
09:30	09:35	Case presentation	Eric Klineberg
09:35	09:55	Group discussion	All Faculty Members
09:55	10:10	Group presentations	All Faculty Members
10:10	10:15	Expert opinion and lecture	Rolf Riise
10:15	10:20	Case solution	Eric Klineberg
10:20	10:25	Summary of findings & Take home messages	John DeVine
10:25	10:30	Evaluation	
10:30	11:30	Case: Proximal junctional kyphosis after fusion	Ian Harding
10:30	10:35	Case presentation	John Devine
10:35	10:55	Group discussion	All Faculty Members
10:55	11:10	Group presentations	All Faculty Members
11:10	11:15	Expert opinion and lecture	Eric Klineberg
11:15	11:20	Case solution	John Devine
11:20	11:25	Summary of findings & Take home messages	Ian Harding
11:25	11:30	Evaluation	
11:30	12:30	Case: Early onset scoliosis in a 4-year-old with osteogenesis imperfecta	John Hutchinson
11:30	11:35	Case presentation	Colin Nnadi
11:35	11:55	Group discussion	All Faculty Members
11:55	12:10	Group presentations	All Faculty Members
12:10	12:15	Expert opinion and lecture	John France
12:15	12:20	Case solution	Colin Nnadi
12:20	12:25	Summary of findings & Take home messages	John Hutchinson
12:25	12:30	Evaluation	

12:30 13:00 Break—Program starts again at 13.00

Monday Afternoon Sessions

Monday 15 December
Afternoon sessions
(Day 1)

Infection in Spine Surgery Room Seehorn—House A

Start End Title Moderators/Faculty

13:00 14:00 Keynote lecture in House C, Sanada 1+2
Lunch served inside lecture room
See page 20 for schedule

14:00 16:00 Workshops in House C, Cafe Chamonix & Foyer C2
Only pre-registered participants
See page 21 for schedule

Module program continues:

16:00 17:00 Case: L3/4 discitis	Bronek Boszczyk
16:00 16:05 Case presentation	Pablo Vela
16:05 16:25 Group discussion	All Faculty Members
16:25 16:40 Group presentations	All Faculty Members
16:40 16:45 Expert opinion and lecture	Ghassan Skaf
16:45 16:50 Case solution	Pablo Vela
16:50 16:55 Summary of findings & Take home messages	Bronek Boszczyk
16:55 17:00 Evaluation	
17:00 18:00 Case: Late low grade infection	Phil Sell
17:00 17:05 Case presentation	Bronek Boszczyk
17:05 17:25 Group discussion	All Faculty Members
17:25 17:40 Group presentations	All Faculty Members
17:40 17:45 Expert opinion and lecture	Bronek Boszczyk
17:45 17:50 Case solution	Bronek Boszczyk
17:50 17:55 Summary of findings & Take home messages	Phil Sell
17:55 18:00 Evaluation	
18:00 19:00 Participants' cases session Cases from participants	Marcelo Gruenberg Osmar Moraes
18:00 18:05 Case Presentation	
18:05 18:10 Discussion	All Faculty Members
18:10 18:15 Summary of findings	
18:15 18:20 Case presentation	
18:20 18:25 Discussion	All Faculty Members
18:25 18:30 Summary of findings	
18:30 18:35 Case Presentation	
18:35 18:40 Discussion	All Faculty Members
18:40 18:45 Summary of findings	
18:45 18:50 Case Presentation	
18:50 18:55 Discussion	All Faculty Members
18:55 19:00 Summary of findings	

Preventing and Managing Complications Room Sanada 1—House C

Start End Title Moderators/Faculty

13:00 14:00 Keynote lecture in House C, Sanada 1+2
Lunch served inside lecture room
See page 20 for schedule

14:00 16:00 Workshops in House C, Cafe Chamonix & Foyer C2
Only pre-registered participants
See page 21 for schedule

Module program continues:

16:00 17:00 Case: Adult deformity in a Parkinsons patient	Emre Acaroglu
16:00 16:05 Case presentation	Robert Dunn
16:05 16:25 Group discussion	All Faculty Members
16:25 16:40 Group presentations	All Faculty Members
16:40 16:45 Expert opinion and lecture	Peter Vajkoczy
16:45 16:50 Case solution	Robert Dunn
16:50 16:55 Summary of findings & Take home messages	Emre Acaroglu
16:55 17:00 Evaluation	
17:00 18:00 Case: Adult deformity—proximal junctional failure with neurology	Claudius Thomé
17:00 17:05 Case presentation	Haluk Berk
17:05 17:25 Group discussion	All Faculty Members
17:25 17:40 Group presentations	All Faculty Members
17:40 17:45 Expert opinion and lecture	Yousry El Hawary
17:45 17:50 Case solution	Haluk Berk
17:50 17:55 Summary of findings & Take home messages	Claudius Thomé
17:55 18:00 Evaluation	
18:00 19:00 Participants' cases session Cases from participants	Teija Lund Bernhard Meyer
18:00 18:05 Case Presentation	
18:05 18:10 Discussion	All Faculty Members
18:10 18:15 Summary of findings	
18:15 18:20 Case presentation	
18:20 18:25 Discussion	All Faculty Members
18:25 18:30 Summary of findings	
18:30 18:35 Case Presentation	
18:35 18:40 Discussion	All Faculty Members
18:40 18:45 Summary of findings	
18:45 18:50 Case Presentation	
18:50 18:55 Discussion	All Faculty Members
18:55 19:00 Summary of findings	

Lumbar Degenerative Disease Room Sanada 2—House C

Start End Title Moderators/Faculty
13:00 14:00 Keynote lecture in House C, Sanada 1+2
Lunch served inside lecture room
 See page 20 for schedule

14:00 16:00 Workshops in House C, Cafe Chamonix & Foyer C2
Only pre-registered participants
 See page 21 for schedule

Module program continues:

16:00 17:00 Case: Degenerative scoliosis Richard Emery
 16:00 16:05 Case presentation Jean Jacques Abitbol
 16:05 16:25 Group discussion All Faculty Members
 16:25 16:40 Group presentations All Faculty Members
 16:40 16:45 Expert opinion and lecture Roberto Chapa
 16:45 16:50 Case solution Jean Jacques Abitbol
 16:50 16:55 Summary of findings & Take home messages Philip Horsting
 16:55 17:00 Evaluation

17:00 18:00 Case: Complications in lumbar surgery Philip Horsting
 17:00 17:05 Case presentation Luca Papavero
 17:05 17:25 Group discussion All Faculty Members
 17:25 17:40 Group presentations All Faculty Members
 17:40 17:45 Expert opinion and lecture Robert Meves
 17:45 17:50 Case solution Luca Papavero
 17:50 17:55 Summary of findings & Take home messages Bharat Dave
 17:55 18:00 Evaluation

18:00 19:00 Participants' cases session Cases from participants Bharat Dave
 18:00 18:05 Case Presentation
 18:05 18:10 Discussion All Faculty Members
 18:10 18:15 Summary of findings
 18:15 18:20 Case presentation
 18:20 18:25 Discussion All Faculty Members
 18:25 18:30 Summary of findings
 18:30 18:35 Case Presentation
 18:35 18:40 Discussion All Faculty Members
 18:40 18:45 Summary of findings
 18:45 18:50 Case Presentation
 18:50 18:55 Discussion All Faculty Members
 18:55 19:00 Summary of findings

Cervical Trauma Room Aspen 1—House C

Start End Title Moderators/Faculty
13:00 14:00 Keynote lecture in House C, Sanada 1+2
Lunch served inside lecture room
 See page 20 for schedule

14:00 16:00 Workshops in House C, Cafe Chamonix & Foyer C2
Only pre-registered participants
 See page 21 for schedule

Module program continues:

16:00 17:00 Case: Subaxial cervical spine fracture with failed implant Mohammad El-Sharkawi
 16:00 16:05 Case presentation Zdenek Klezl
 16:05 16:25 Group discussion All Faculty Members
 16:25 16:40 Group presentations All Faculty Members
 16:40 16:45 Expert opinion and lecture Luiz Vialle
 16:45 16:50 Case solution Zdenek Klezl
 16:50 16:55 Summary of findings & Take home messages Robert Crawford
 16:55 17:00 Evaluation

17:00 18:15 Case: Pediatric cervical spine injury without radiology Roger Härtl
 17:00 17:05 Case presentation Patrick Hsieh
 17:05 17:25 Group discussion All Faculty Members
 17:25 17:40 Group presentations All Faculty Members
 17:40 17:45 Expert opinion and lecture Roger Härtl
 17:45 17:50 Case solution Patrick Hsieh
 17:50 17:55 Summary of findings & Take home messages Nasir Quraishi
 17:55 18:10 Expert opinion and lecture MIS in cervical spine fractures Roger Härtl
 18:10 18:15 Evaluation

18:15 19:00 Participants' cases session Cases from participants Zdenek Klezl
 18:15 18:20 Case Presentation
 18:20 18:25 Discussion All Faculty Members
 18:25 18:30 Summary of findings
 18:30 18:35 Case presentation
 18:35 18:40 Discussion All Faculty Members
 18:40 18:45 Summary of findings
 18:45 18:50 Case Presentation
 18:50 18:55 Discussion All Faculty Members
 18:55 19:00 Summary of findings

Current Concepts in Deformity Treatment Room Aspen 2—House C

Start End Title Moderators/Faculty
13:00 14:00 Keynote lecture in House C, Sanada 1+2
Lunch served inside lecture room
 See page 20 for schedule

14:00 16:00 Workshops in House C, Cafe Chamonix & Foyer C2
Only pre-registered participants
 See page 21 for schedule

Module program continues:

16:00 17:00 Case: Adult progression of pediatric scoliosis and spondylolisthesis John France
 16:00 16:05 Case presentation Claudio Lamartina
 16:05 16:25 Group discussion All Faculty Members
 16:25 16:40 Group presentations All Faculty Members
 16:40 16:45 Expert opinion and lecture Ian Harding
 16:45 16:50 Case solution Claudio Lamartina
 16:50 16:55 Summary of findings & Take home messages John France
 16:55 17:00 Evaluation

17:00 18:00 Case: Spondyloptosis with high grade spondylolisthesis Carlos Tucci
 17:00 17:05 Case presentation Jeremy Fairbank
 17:05 17:25 Group discussion All Faculty Members
 17:25 17:40 Group presentations All Faculty Members
 17:40 17:45 Expert opinion and lecture Colin Nnadi
 17:45 17:50 Case solution Jeremy Fairbank
 17:50 17:55 Summary of findings & Take home messages Carlos Tucci
 17:55 18:00 Evaluation

18:00 19:00 Participants' cases session Cases from participants Darrel Brodke
 18:00 18:05 Case Presentation
 18:05 18:10 Discussion All Faculty Members
 18:10 18:15 Summary of findings Eric Klineberg
 18:15 18:20 Case presentation
 18:20 18:25 Discussion All Faculty Members
 18:25 18:30 Summary of findings John Hutchinson
 18:30 18:35 Case Presentation
 18:35 18:40 Discussion All Faculty Members
 18:40 18:45 Summary of findings Rolf Riise
 18:45 18:50 Case Presentation
 18:50 18:55 Discussion All Faculty Members
 18:55 19:00 Summary of findings Claudio Lamartina

Tuesday Morning Sessions

Tuesday 16 December Morning sessions (Day 2)

Upper Cervical Spine Room Seehorn—House A

Start	End	Title	Moderators/Faculty
08:00	09:00	Case: Late deformity at C1/2	Shanmuganathan Rajasekaran
08:00	08:05	Case presentation	Phil Sell
08:05	08:25	Group discussion	All Faculty Members
08:25	08:40	Group presentations	All Faculty Members
08:40	08:45	Expert opinion and lecture	Bronek Boszczyk
08:45	08:50	Case solution	Phil Sell
08:50	08:55	Summary of findings & Take home messages	Shanmuganathan Rajasekaran
08:55	09:00	Evaluation	
09:00	10:00	Case: Screw complication after anterior odontoid stabilization	Pablo Vela
09:00	09:05	Case presentation	Klaus Schnake
09:05	09:25	Group discussion	All Faculty Members
09:25	09:40	Group presentations	All Faculty Members
09:40	09:45	Expert opinion and lecture	Alexandre Sadao Iutaka
09:45	09:50	Case solution	Klaus Schnake
09:50	09:55	Summary of findings & Take home messages	Pablo Vela
09:55	10:00	Evaluation	
10:00	10:30	Coffee break in House C, Foyer C1	
10:30	11:30	Case: C2 benign tumor	Phil Sell
10:30	10:35	Case presentation	Juan Emmerich
10:35	10:55	Group discussion	All Faculty Members
10:55	11:10	Group presentations	All Faculty Members
11:10	11:15	Expert opinion and lecture	Shanmuganathan Rajasekaran
11:15	11:20	Case solution	Juan Emmerich
11:20	11:25	Summary of findings & Take home messages	Phil Sell
11:25	11:30	Evaluation	
11:30	12:30	Case: Complex C1/2 fracture	Osmar Moraes
11:30	11:35	Case presentation	Alexandre Sadao Iutaka
11:35	11:55	Group discussion	All Faculty Members
11:55	12:10	Group presentations	All Faculty Members
12:10	12:15	Expert opinion and lecture	Bronek Boszczyk
12:15	12:20	Case solution	Alexandre Sadao Iutaka
12:20	12:25	Summary of findings & Take home messages	Osmar Moraes
12:25	12:30	Evaluation	
12:30	13:00	Break—Program starts again at 13.00	

Solutions for Complex Cases Room Sanada 1—House C

Start	End	Title	Moderators/Faculty
08:00	09:00	Case: Basilar invagination in an OI patient	Peter Vajkoczy
08:00	08:05	Case presentation	Michael Fehlings
08:05	08:25	Panel	Claudius Thome, John Duff, Youssry El Hawary
08:25	08:40	Discussion	All Faculty Members
08:40	08:45	Expert opinion and lecture	Gomatam Vijay Kumar
08:45	08:50	Case solution	Michael Fehlings
08:50	08:55	Summary of findings & Take home messages	Peter Vajkoczy
08:55	09:00	Evaluation	
09:00	10:00	Case: C2/3 chordoma	Youssry El Hawary
09:00	09:05	Case presentation	Claudius Thome
09:05	09:25	Group discussion	All Faculty Members
09:25	09:40	Group presentations	All Faculty Members
09:40	09:45	Expert opinion and lecture	John Duff
09:45	09:50	Case solution	Claudius Thome
09:50	09:55	Summary of findings & Take home messages	Youssry El Hawary
09:55	10:00	Evaluation	
10:00	10:30	Coffee break in House C, Foyer C1	
10:30	11:30	Case: Congenital deformity with a complication cascade	Haluk Berk
10:30	10:35	Case presentation	Emre Acaroglu
10:35	10:55	Group discussion	All Faculty Members
10:55	11:10	Group presentations	All Faculty Members
11:10	11:15	Expert opinion and lecture	Michael Fehlings
11:15	11:20	Case solution	Emre Acaroglu
11:20	11:25	Summary of findings & Take home messages	Haluk Berk
11:25	11:30	Evaluation	
11:30	12:30	Case: Late infection in an instrumented spine	Robert Dunn
11:30	11:35	Case presentation	Haluk Berk
11:35	11:55	Group discussion	All Faculty Members
11:55	12:10	Group presentations	All Faculty Members
12:10	12:15	Expert opinion and lecture	Emre Acaroglu
12:15	12:20	Case solution	Haluk Berk
12:20	12:25	Summary of findings & Take home messages	Robert Dunn
12:25	12:30	Evaluation	
12:30	13:00	Break—Program starts again at 13.00	

Cervical Degenerative Disease

Room Sanada 2—House C

Start	End	Title	Moderators/Faculty
08:00	09:00	Case: Axial neck pain	YH Yau
08:00	08:05	Case presentation	Philip Horsting
08:05	08:25	Group discussion	All Faculty Members
08:25	08:40	Group presentations	All Faculty Members
08:40	08:45	Expert opinion and lecture	Eung Ha Kim
08:45	08:50	Case solution	Philip Horsting
08:50	08:55	Summary of findings & Take home messages	Luca Papavero
08:55	09:00	Evaluation	
09:00	10:00	Case: Spondylotic cervical radiculopathy	Luca Papavero
09:00	09:05	Case presentation	Richard Emery
09:05	09:25	Group discussion	All Faculty Members
09:25	09:40	Group presentations	All Faculty Members
09:40	09:45	Expert opinion and lecture	Jean Jacques Abitbol
09:45	09:50	Case solution	Richard Emery
09:50	09:55	Summary of findings & Take home messages	Yoshiharu Kawaguchi
09:55	10:00	Evaluation	
10:00	10:30	Coffee break in House C, Foyer C1	
10:30	11:30	Case: Spondylotic cervical myelopathy	Yoshihara Kawaguchi
10:30	10:35	Case presentation	Roberto Chapa
10:35	10:55	Group discussion	All Faculty Members
10:55	11:10	Group presentations	All Faculty Members
11:10	11:15	Expert opinion and lecture	John Liu
11:15	11:20	Case solution	Roberto Chapa
11:20	11:25	Summary of findings & Take home messages	Jean Jacques Abitbol
11:25	11:30	Evaluation	
11:30	12:30	Case: Ossification of the posterior longitudinal ligament in the cervical spine	Jean Jacques Abitbol
11:30	11:35	Case presentation	Bharat Dave
11:35	11:55	Group discussion	All Faculty Members
11:55	12:10	Group presentations	All Faculty Members
12:10	12:15	Expert opinion and lecture	Yoshiharu Kawaguchi
12:15	12:20	Case solution	Bharat Dave
12:20	12:25	Summary of findings & Take home messages	John Liu
12:25	12:30	Evaluation	
12:30	13:00	Break—Program starts again at 13.00	

Thoracolumbar Trauma

Room Aspen 1—House C

Start	End	Title	Moderators/Faculty
08:00	09:00	Case: Nonoperative treatment of thoracolumbar fractures	Roger Härtl
08:00	08:05	Case presentation	Mohammad El-Sharkawi
08:05	08:25	Group discussion	All Faculty Members
08:25	08:40	Group presentations	All Faculty Members
08:40	08:45	Expert opinion and lecture	Nasir Quraishi
08:45	08:50	Case solution	Mohammad El-Sharkawi
08:50	08:55	Summary of findings & Take home messages	Thomas Chen
08:55	09:00	Evaluation	
09:00	10:00	Case: Burst thoracolumbar fracture (type A3 & A4)	Thomas Chen
09:00	09:05	Case presentation	Abdulaziz Al-Mutair
09:05	09:25	Group discussion	All Faculty Members
09:25	09:40	Group presentations	All Faculty Members
09:40	09:45	Expert opinion and lecture	Zdenek Klezl
09:45	09:50	Case solution	Abdulaziz Al-Mutair
09:50	09:55	Summary of findings & Take home messages	Robert Crawford
09:55	10:00	Evaluation	
10:00	10:30	Coffee break in House C, Foyer C1	
10:30	11:30	Case: Type C thoracolumbar fractures	Patrick Hsieh
10:30	10:35	Case presentation	Nasir Quraishi
10:35	10:55	Group discussion	All Faculty Members
10:55	11:10	Group presentations	All Faculty Members
11:10	11:15	Expert opinion and lecture	Frank Kandziora
11:15	11:20	Case solution	Nasir Quraishi
11:20	11:25	Summary of findings & Take home messages	Frank Kandziora
11:25	11:30	Evaluation	
11:30	12:30	Case: Chance fractures	Zdenek Klezl
11:30	11:35	Case presentation	Robert Crawford
11:35	11:55	Group discussion	All Faculty Members
11:55	12:10	Group presentations	All Faculty Members
12:10	12:15	Expert opinion and lecture	Thomas Chen
12:15	12:20	Case solution	Robert Crawford
12:20	12:25	Summary of findings & Take home messages	Luiiz Vialle
12:25	12:30	Evaluation	
12:30	13:00	Break—Program starts again at 13.00	

The Aging Spine—Adult Deformity

Room Aspen 2—House C

Start	End	Title	Moderators/Faculty
08:00	09:00	Case: Surgical nuances in the aging spine	
08:00	08:05	Case presentation	Colin Nnadi
08:05	08:25	Group discussion	All Faculty Members
08:25	08:40	Group presentations	All Faculty Members
08:40	08:45	Expert opinion and lecture	John DeVine
08:45	08:50	Case solution	Carlos Tucci
08:50	08:55	Summary of findings & Take home messages	Colin Nnadi
08:55	09:00	Evaluation	
09:00	10:00	Case: S1/2 fracture after fusion with deformity	Claudio Lamartina
09:00	09:05	Case presentation	Rolf Riise
09:05	09:25	Group discussion	All Faculty Members
09:25	09:40	Group presentations	All Faculty Members
09:40	09:45	Expert opinion and lecture	Jeremy Fairbank
09:45	09:50	Case solution	Rolf Riise
09:50	09:55	Summary of findings & Take home messages	Claudio Lamartina
09:55	10:00	Evaluation	
10:00	10:30	Coffee break in House C, Foyer C1	
10:30	11:30	Case: Incomplete correction with minimally invasive techniques	Rolf Riise
10:30	10:35	Case presentation	John France
10:35	10:55	Group discussion	All Faculty Members
10:55	11:10	Group presentations	All Faculty Members
11:10	11:15	Expert opinion and lecture	Carlos Tucci
11:15	11:20	Case solution	John France
11:20	11:25	Summary of findings & Take home messages	Rolf Riise
11:25	11:30	Evaluation	
11:30	12:30	Case: Failed fixation and complications of the aging spine	Jeremy Fairbank
11:30	11:35	Case presentation	Ian Harding
11:35	11:55	Group discussion	All Faculty Members
11:55	12:10	Group presentations	All Faculty Members
12:10	12:15	Expert opinion and lecture	Claudio Lamartina
12:15	12:20	Case solution	Ian Harding
12:20	12:25	Summary of findings & Take home messages	Jeremy Fairbank
12:25	12:30	Evaluation	
12:30	13:00	Break—Program starts again at 13.00	

Tuesday Afternoon Sessions

Tuesday 16 December Afternoon sessions (Day 2)

Upper Cervical Spine Room Seehorn—House A

Start End Title Moderators/Faculty

13:00 14:00 Keynote lecture in House C, Sanada 1+2

Lunch served inside lecture room

See page 20 for schedule

14:00 16:00 Workshops in House C, Cafe Chamonix & Foyer C2

Only pre-registered participants

See page 21 for schedule

Module program continues:

16:00 17:00 Case: AR axial and sub axial combined compromise

Bronek Boszczyk

16:00 16:05 Case presentation

Pablo Vela

16:05 16:25 Group discussion

All Faculty Members

16:25 16:40 Group presentations

All Faculty Members

16:40 16:45 Expert opinion and lecture

Phil Sell

16:45 16:50 Case solution

Pablo Vela

16:50 16:55 Summary of findings & Take home messages

Bronek Boszczyk

16:55 17:00 Evaluation

**17:00 18:00 Participants' cases session
Cases from participants**

Osmar Moraes
Marcelo Gruenberg

17:00 17:05 Case Presentation

17:05 17:10 Discussion

All Faculty Members

17:10 17:15 Summary of findings

17:15 17:20 Case presentation

17:20 17:25 Discussion

All Faculty Members

17:25 17:30 Summary of findings

17:30 17:35 Case Presentation

17:35 17:40 Discussion

All Faculty Members

17:40 17:45 Summary of findings

17:45 17:50 Case Presentation

17:50 17:55 Discussion

All Faculty Members

17:55 18:00 Summary of findings

Solutions for Complex Cases Room Sanada 1—House C

Start End Title Moderators/Faculty

13:00 14:00 Keynote lecture in House C, Sanada 1+2

Lunch served inside lecture room

See page 20 for schedule

14:00 16:00 Workshops in House C, Cafe Chamonix & Foyer C2

Only pre-registered participants

See page 21 for schedule

Module program continues:

16:00 17:00 Case: LBP in a multioperated patient

John Duff

16:00 16:05 Case presentation

Teija Lund

16:05 16:25 Debate: Is it reasonable to try one more time

Emre Acaroglu(yes)
Youssry El Hawary(no)

16:25 16:40 Discussion

All Faculty Members

16:40 16:45 Expert opinion and lecture

Robert Dunn

16:45 16:50 Case solution

Teija Lund

16:50 16:55 Summary of findings & Take home messages

John Duff

16:55 17:00 Evaluation

**17:00 18:00 Participants' cases session
Cases from participants**

Peter Vajkoczy
Gomatam Vijay Kumar

17:00 17:05 Case Presentation

17:05 17:10 Discussion

All Faculty Members

17:10 17:15 Summary of findings

17:15 17:20 Case presentation

17:20 17:25 Discussion

All Faculty Members

17:25 17:30 Summary of findings

17:30 17:35 Case Presentation

17:35 17:40 Discussion

All Faculty Members

17:40 17:45 Summary of findings

17:45 17:50 Case Presentation

17:50 17:55 Discussion

All Faculty Members

17:55 18:00 Summary of findings

Cervical Degenerative Disease Room Sanada 2—House C

Start End Title Moderators/Faculty

13:00 14:00 Keynote lecture in House C, Sanada 1+2
Lunch served inside lecture room
See page 20 for schedule

14:00 16:00 Workshops in House C, Cafe Chamonix & Foyer C2
Only pre-registered participants
See page 21 for schedule

Module program continues:

16:00 17:00 Case: Complications in cervical surgery

	John Liu
16:00 16:05	Case presentation Robert Meves
16:05 16:25	Group discussion All Faculty Members
16:25 16:40	Group presentations All Faculty Members
16:40 16:45	Expert opinion and lecture Luca Papavero
16:45 16:50	Case solution Robert Meves
16:50 16:55	Summary of findings & Take home messages Eung Ha Kim
16:55 17:00	Evaluation

17:00 18:00 Participants' cases session
Cases from participants

	Eung Ha Kim
17:00 17:05	Case Presentation
17:05 17:10	Discussion All Faculty Members
17:10 17:15	Summary of findings
17:15 17:20	Case presentation
17:20 17:25	Discussion All Faculty Members
17:25 17:30	Summary of findings
17:30 17:35	Case Presentation
17:35 17:40	Discussion All Faculty Members
17:40 17:45	Summary of findings
17:45 17:50	Case Presentation
17:50 17:55	Discussion All Faculty Members
17:55 18:00	Summary of findings

Thoracolumbar Trauma Room Aspen 1—House C

Start End Title Moderators/Faculty

13:00 14:00 Keynote lecture in House C, Sanada 1+2
Lunch served inside lecture room
See page 20 for schedule

14:00 16:00 Workshops in House C, Cafe Chamonix & Foyer C2
Only pre-registered participants
See page 21 for schedule

Module program continues:

16:00 17:15 Case: Thoracolumbar fractures in osteoporotic bone

	Abdulaziz Al-Mutair
16:00 16:05	Case presentation Zdenek Klezl
16:05 16:25	Group discussion All Faculty Members
16:25 16:40	Group presentations All Faculty Members
16:40 16:45	Expert opinion and lecture Mohammad El-Sharkawi
16:45 16:50	Case solution Zdenek Klezl
16:50 16:55	Summary of findings & Take home messages Nasir Quraishi
16:55 17:10	Expert opinion and lecture MIS in thoracic spine fractures Roger Härtl
17:10 17:15	Evaluation

17:15 18:00 Participants' cases session
Cases from participants

	Zdenek Klezl
17:15 17:20	Case Presentation
17:20 17:25	Discussion All Faculty Members
17:25 17:30	Summary of findings
17:30 17:35	Case presentation
17:35 17:40	Discussion All Faculty Members
17:40 17:45	Summary of findings
17:45 17:50	Case Presentation
17:50 17:55	Discussion All Faculty Members
17:55 18:00	Summary of findings

The Aging Spine— Adult Deformity Room Aspen 2—House C

Start End Title Moderators/Faculty

13:00 14:00 Keynote lecture in House C, Sanada 1+2
Lunch served inside lecture room
See page 20 for schedule

14:00 16:00 Workshops in House C, Cafe Chamonix & Foyer C2
Only pre-registered participants
See page 21 for schedule

Module program continues:

16:00 17:00 Case: Cervical spine osteotomies and deformity correction

	Eric Klineberg
16:00 16:05	Case presentation John Hutchinson
16:05 16:25	Group discussion All Faculty Members
16:25 16:40	Group presentations All Faculty Members
16:40 16:45	Expert opinion and lecture John Hutchinson
16:45 16:50	Case solution John Hutchinson
16:50 16:55	Summary of findings & Take home messages Eric Klineberg
16:55 17:00	Evaluation

17:00 18:00 Participants' cases session
Cases from participants

	Darrel Brodke
17:00 17:05	Case Presentation
17:05 17:10	Discussion All Faculty Members
17:10 17:15	Summary of findings John DeVine
17:15 17:20	Case presentation
17:20 17:25	Discussion All Faculty Members
17:25 17:30	Summary of findings John France
17:30 17:35	Case Presentation
17:35 17:40	Discussion All Faculty Members
17:40 17:45	Summary of findings Jeremy Fairbank
17:45 17:50	Case Presentation
17:50 17:55	Discussion All Faculty Members
17:55 18:00	Summary of findings Ian Harding

Wednesday Morning Sessions

Wednesday 17 December Morning sessions (Day 3)

Infection in Spine Surgery Room Seehorn—House A

Start	End	Title	Moderators/Faculty
08:00	09:00	Case: Infection after AxiaLIF	Osmar Moraes
08:00	08:05	Case presentation	Klaus Schnake
08:05	08:25	Group discussion	All Faculty Members
08:25	08:40	Group presentations	All Faculty Members
08:40	08:45	Expert opinion and lecture	Marcelo Gruenberg
08:45	08:50	Case solution	Klaus Schnake
08:50	08:55	Summary of findings & Take home messages	Osmar Moraes
08:55	09:00	Evaluation	
09:00	10:00	Case: Lumbar spondylodiscitis in an elderly patient	Abulrazzaq Alobaid
09:00	09:05	Case presentation	Alexandre Sadao Iutaka
09:05	09:25	Group discussion	All Faculty Members
09:25	09:40	Group presentations	All Faculty Members
09:40	09:45	Expert opinion and lecture	Marcelo Gruenberg
09:45	09:50	Case solution	Alexandre Sadao Iutaka
09:50	09:55	Summary of findings & Take home messages	Abulrazzaq Alobaid
09:55	10:00	Evaluation	
10:00	10:30	Coffee break in House C, Foyer C1	
10:30	11:30	Case: Spine TB infection	Shanmuganathan Rajasekaran
10:30	10:35	Case presentation	Abulrazzaq Alobaid
10:35	10:55	Group discussion	All Faculty Members
10:55	11:10	Group presentations	All Faculty Members
11:10	11:15	Expert opinion and lecture	Shanmuganathan Rajasekaran
11:15	11:20	Case solution	Abulrazzaq Alobaid
11:20	11:25	Summary of findings & Take home messages	Shanmuganathan Rajasekaran
11:25	11:30	Evaluation	
11:30	12:30	Case: Late infection after lumbar revision instrumentation	Juan Emmerich
11:30	11:35	Case presentation	Phil Sell
11:35	11:55	Group discussion	All Faculty Members
11:55	12:10	Group presentations	All Faculty Members
12:10	12:15	Expert opinion and lecture	Klaus Schnake
12:15	12:20	Case solution	Phil Sell
12:20	12:25	Summary of findings & Take home messages	Juan Emmerich
12:25	12:30	Evaluation	
12:30	13:00	Break—Program starts again at 13.00	

Preventing and Managing Complications Room Sanada 1—House C

Start	End	Title	Moderators/Faculty
08:00	09:00	Case: Overlooked cervical spine fracture in ankylosing spondylitis	Peter Vajkoczy
08:00	08:05	Case presentation	Michael Fehlings
08:05	08:25	Group discussion	All Faculty Members
08:25	08:40	Group presentations	All Faculty Members
08:40	08:45	Expert opinion and lecture	Claudius Thomé
08:45	08:50	Case solution	Michael Fehlings
08:50	08:55	Summary of findings & Take home messages	Peter Vajkoczy
08:55	09:00	Evaluation	
09:00	10:00	Case: Cervical deformity after thoraco-lumbosacral fixation	Gomatam Vijay Kumar
09:00	09:05	Case presentation	Peter Vajkoczy
09:05	09:25	Debate: Does sagittal balance correction solve all problems	Haluk Berk(yes) Bernhard Meyer(no)
09:25	09:40	Discussion	All Faculty Members
09:40	09:45	Expert opinion and lecture	John Duff
09:45	09:50	Case solution	Peter Vajkoczy
09:50	09:55	Summary of findings & Take home messages	Gomatam Vijay Kumar
09:55	10:00	Evaluation	
10:00	10:30	Coffee break in House C, Foyer C1	
10:30	11:30	Case: Implant failure in an osteoporotic spine	Michael Fehlings
10:30	10:35	Case presentation	John Duff
10:35	10:55	Faculty panel	Haluk Berk, Gomatam Vijay Kumar, Emre Acaroglu, Youssry Elhawary
10:55	11:10	Discussion	All Faculty Members
11:10	11:15	Expert opinion and lecture	Robert Dunn
11:15	11:20	Case solution	John Duff
11:20	11:25	Summary of findings & Take home messages	Michael Fehlings
11:25	11:30	Evaluation	
11:30	12:30	Case: Adult deformity in a Parkinson patient	Emre Acaroglu
11:30	11:35	Case presentation	Robert Dunn
11:35	11:55	Group discussion	All Faculty Members
11:55	12:10	Group presentations	All Faculty Members
12:10	12:15	Expert opinion and lecture	Peter Vajkoczy
12:15	12:20	Case solution	Robert Dunn
12:20	12:25	Summary of findings & Take home messages	Emre Acaroglu
12:25	12:30	Evaluation	
12:30	13:00	Break—Program starts again at 13.00	

Lumbar Degenerative Disease Room Sanada 2—House C

Start	End	Title	Moderators/Faculty
08:00	09:00	Case: Axial low back pain	YH Yau
08:00	08:05	Case presentation	Yoshiharu Kawaguchi
08:05	08:25	Group discussion	All Faculty Members
08:25	08:40	Group presentations	All Faculty Members
08:40	08:45	Expert opinion and lecture	Richard Emery
08:45	08:50	Case solution	Yoshiharu Kawaguchi
08:50	08:55	Summary of findings & Take home messages	Roberto Chapa
08:55	09:00	Evaluation	
09:00	10:00	Case: Recurrent lumbar disc prolapse	Roberto Chapa
09:00	09:05	Case presentation	Eung Ha Kim
09:05	09:25	Group discussion	All Faculty Members
09:25	09:40	Group presentations	All Faculty Members
09:40	09:45	Expert opinion and lecture	Bharat Dave
09:45	09:50	Case solution	Eung Ha Kim
09:50	09:55	Summary of findings & Take home messages	Robert Meves
09:55	10:00	Evaluation	
10:00	10:30	Coffee break in House C, Foyer C1	
10:30	11:30	Case: Lumbar degenerative spondylolisthesis	Robert Meves
10:30	10:35	Case presentation	John Liu
10:35	10:55	Group discussion	All Faculty Members
10:55	11:10	Group presentations	All Faculty Members
11:10	11:15	Expert opinion and lecture	Philip Horsting
11:15	11:20	Case solution	John Liu
11:20	11:25	Summary of findings & Take home messages	Richard Emery
11:25	11:30	Evaluation	
11:30	12:30	Case: Degenerative scoliosis	Richard Emery
11:30	11:35	Case presentation	Jean Jacques Abitbol
11:35	11:55	Group discussion	All Faculty Members
11:55	12:10	Group presentations	All Faculty Members
12:10	12:15	Expert opinion and lecture	Roberto Chapa
12:15	12:20	Case solution	Jean Jacques Abitbol
12:20	12:25	Summary of findings & Take home messages	Philip Horsting
12:25	12:30	Evaluation	
12:30	13:00	Break—Program starts again at 13.00	

Cervical Trauma Room Aspen 1—House C

Start	End	Title	Moderators/Faculty
08:00	09:00	Case: Atlas axis (C1/2) fractures	Luiz Vialle
08:00	08:05	Case presentation	Frank Kandziora
08:05	08:25	Group discussion	All Faculty Members
08:25	08:40	Group presentations	All Faculty Members
08:40	08:45	Expert opinion and lecture	Zdenek Klezl
08:45	08:50	Case solution	Frank Kandziora
08:50	08:55	Summary of findings & Take home messages	Frank Kandziora
08:55	09:00	Evaluation	
09:00	10:00	Case: C2 fracture/odontoid fracture	Abdulaziz Al-Mutair
09:00	09:05	Case presentation	Roger Härtl
09:05	09:25	Group discussion	All Faculty Members
09:25	09:40	Group presentations	All Faculty Members
09:40	09:45	Expert opinion and lecture	Thomas Chen
09:45	09:50	Case solution	Roger Härtl
09:50	09:55	Summary of findings & Take home messages	Mohammad El-Sharkawi
09:55	10:00	Evaluation	
10:00	10:30	Coffee break in House C, Foyer C1	
10:30	11:30	Case: Occipito cervical fusion in trauma	Robert Crawford
10:30	10:35	Case presentation	Luiz Vialle
10:35	10:55	Group discussion	All Faculty Members
10:55	11:10	Group presentations	All Faculty Members
11:10	11:15	Expert opinion and lecture	Robert Crawford
11:15	11:20	Case solution	Luiz Vialle
11:20	11:25	Summary of findings & Take home messages	Nasir Quraishi
11:25	11:30	Evaluation	
11:30	12:30	Case: Subaxial cervical spine fracture with failed implant	Mohammad El-Sharkawi
11:30	11:35	Case presentation	Zdenek Klezl
11:35	11:55	Group discussion	All Faculty Members
11:55	12:10	Group presentations	All Faculty Members
12:10	12:15	Expert opinion and lecture	Luiz Vialle
12:15	12:20	Case solution	Zdenek Klezl
12:20	12:25	Summary of findings & Take home messages	Robert Crawford
12:25	12:30	Evaluation	
12:30	13:00	Break—Program starts again at 13.00	

Current Concepts in Deformity Treatment Room Aspen 2—House C

Start	End	Title	Moderators/Faculty
08:00	09:00	Case: Adult degenerative deformity	
08:00	08:05	Case presentation	John DeVine
08:05	08:25	Group discussion	Eric Klineberg
08:25	08:40	Group presentations	All Faculty Members
08:40	08:45	Expert opinion and lecture	Rolf Riise
08:45	08:50	Case solution	Eric Klineberg
08:50	08:55	Summary of findings & Take home messages	John DeVine
08:55	09:00	Evaluation	
09:00	10:00	Case: Proximal junctional kyphosis after fusion	Ian Harding
09:00	09:05	Case presentation	John Devine
09:05	09:25	Group discussion	All Faculty Members
09:25	09:40	Group presentations	All Faculty Members
09:40	09:45	Expert opinion and lecture	Eric Klineberg
09:45	09:50	Case solution	John Devine
09:50	09:55	Summary of findings & Take home messages	Ian Harding
09:55	10:00	Evaluation	
10:00	10:30	Coffee break in House C, Foyer C1	
10:30	11:30	Case: Early onset scoliosis in a 4-year-old with osteogenesis imperfecta	John Hutchinson
10:30	10:35	Case presentation	Colin Nnadi
10:35	10:55	Group discussion	All Faculty Members
10:55	11:10	Group presentations	All Faculty Members
11:10	11:15	Expert opinion and lecture	John France
11:15	11:20	Case solution	Colin Nnadi
11:20	11:25	Summary of findings & Take home messages	John Hutchinson
11:25	11:30	Evaluation	
11:30	12:30	Case: Adult progression of pediatric scoliosis and spondylolisthesis	John France
11:30	11:35	Case presentation	Claudio Lamartina
11:35	11:55	Group discussion	All Faculty Members
11:55	12:10	Group presentations	All Faculty Members
12:10	12:15	Expert opinion and lecture	Ian Harding
12:15	12:20	Case solution	Claudio Lamartina
12:20	12:25	Summary of findings & Take home messages	John France
12:25	12:30	Evaluation	
12:30	13:00	Break—Program starts again at 13.00	

Wednesday Afternoon Sessions

Wednesday 17 December Afternoon sessions (Day 3)

Infection in Spine Surgery Room Seehorn—House A

Start End Title Moderators/Faculty

13:00 14:00 Keynote lecture in House C, Sanada 1+2
Lunch served inside lecture room
See page 20 for schedule

14:00 16:00 Workshops in House C, Cafe Chamonix & Foyer C2
Only pre-registered participants
See page 21 for schedule

Module program continues:

16:00 17:00 Case: Cervical discitis and epidural abscess Juan Emmerich

16:00 16:05 Case presentation Broniek Boszczyk

16:05 16:25 Group discussion All Faculty Members

16:25 16:40 Group presentations All Faculty Members

16:40 16:45 Expert opinion and lecture Abulrazzaq Alobaid

16:45 16:50 Case solution Broniek Boszczyk

16:50 16:55 Summary of findings & Take home messages Juan Emmerich

16:55 17:00 Evaluation

17:00 18:00 Participants' cases session Osmar Moraes
Cases from participants Marcelo Gruenberg

17:00 17:05 Case Presentation

17:05 17:10 Discussion All Faculty Members

17:10 17:15 Summary of findings

17:15 17:20 Case presentation

17:20 17:25 Discussion All Faculty Members

17:25 17:30 Summary of findings

17:30 17:35 Case Presentation

17:35 17:40 Discussion All Faculty Members

17:40 17:45 Summary of findings

17:45 17:50 Case Presentation

17:50 17:55 Discussion All Faculty Members

17:55 18:00 Summary of findings

Preventing and Managing Complications Room Sanada 1—House C

Start End Title Moderators/Faculty

13:00 14:00 Keynote lecture in House C, Sanada 1+2
Lunch served inside lecture room
See page 20 for schedule

14:00 16:00 Workshops in House C, Cafe Chamonix & Foyer C2
Only pre-registered participants
See page 21 for schedule

Module program continues:

16:00 17:00 Case: Adult deformity—proximal junctional failure with neurology Claudius Thomé

16:00 16:05 Case presentation Haluk Berk

16:05 16:25 Group discussion All Faculty Members

16:25 16:40 Group presentations All Faculty Members

16:40 16:45 Expert opinion and lecture Youssry El Hawary

16:45 16:50 Case solution Haluk Berk

16:50 16:55 Summary of findings & Take home messages Claudius Thomé

16:55 17:00 Evaluation

17:00 18:00 Participants' cases session Teija Lund
Cases from participants Bernhard Meyer

17:00 17:05 Case Presentation

17:05 17:10 Discussion All Faculty Members

17:10 17:15 Summary of findings

17:15 17:20 Case presentation

17:20 17:25 Discussion All Faculty Members

17:25 17:30 Summary of findings

17:30 17:35 Case Presentation

17:35 17:40 Discussion All Faculty Members

17:40 17:45 Summary of findings

17:45 17:50 Case Presentation

17:50 17:55 Discussion All Faculty Members

17:55 18:00 Summary of findings

Lumbar Degenerative Disease Room Sanada 2—House C

Start End Title Moderators/Faculty

13:00 14:00 Keynote lecture in House C, Sanada 1+2
Lunch served inside lecture room
See page 20 for schedule

14:00 16:00 Workshops in House C, Cafe Chamonix & Foyer C2
Only pre-registered participants
See page 21 for schedule

Module program continues:

16:00 17:00 Case: Complications in lumbar surgery	Philip Horsting
16:00 16:05 Case presentation	Luca Papavero
16:05 16:25 Group discussion	All Faculty Members
16:25 16:40 Group presentations	All Faculty Members
16:40 16:45 Expert opinion and lecture	Robert Meves
16:45 16:50 Case solution	Luca Papavero
16:50 16:55 Summary of findings & Take home messages	Bharat Dave
16:55 17:00 Evaluation	
17:00 18:00 Participants' cases session Cases from participants	Bharat Dave
17:00 17:05 Case Presentation	
17:05 17:10 Discussion	All Faculty Members
17:10 17:15 Summary of findings	
17:15 17:20 Case presentation	
17:20 17:25 Discussion	All Faculty Members
17:25 17:30 Summary of findings	
17:30 17:35 Case Presentation	
17:35 17:40 Discussion	All Faculty Members
17:40 17:45 Summary of findings	
17:45 17:50 Case Presentation	
17:50 17:55 Discussion	All Faculty Members
17:55 18:00 Summary of findings	

Cervical Trauma Room Aspen 1—House C

Start End Title Moderators/Faculty

13:00 14:00 Keynote lecture in House C, Sanada 1+2
Lunch served inside lecture room
See page 20 for schedule

14:00 16:00 Workshops in House C, Cafe Chamonix & Foyer C2
Only pre-registered participants
See page 21 for schedule

Module program continues:

16:00 17:15 Case: Pediatric cervical spine injury without radiology	Roger Härtl
16:00 16:05 Case presentation	Patrick Hsieh
16:05 16:25 Group discussion	All Faculty Members
16:25 16:40 Group presentations	All Faculty Members
16:40 16:45 Expert opinion and lecture	Roger Härtl
16:45 16:50 Case solution	Patrick Hsieh
16:50 16:55 Summary of findings & Take home messages	Nasir Quraishi
16:55 17:10 Expert opinion and lecture MIS in cervical spine fractures	Roger Härtl
17:10 17:15 Evaluation	
17:15 18:00 Participants' cases session Cases from participants	Zdenek Klezl
17:15 17:20 Case Presentation	
17:20 17:25 Discussion	All Faculty Members
17:25 17:30 Summary of findings	
17:30 17:35 Case presentation	
17:35 17:40 Discussion	All Faculty Members
17:40 17:45 Summary of findings	
17:45 17:50 Case Presentation	
17:50 17:55 Discussion	All Faculty Members
17:55 18:00 Summary of findings	

Current Concepts in Deformity Treatment Room Aspen 2—House C

Start End Title Moderators/Faculty

13:00 14:00 Keynote lecture in House C, Sanada 1+2
Lunch served inside lecture room
See page 20 for schedule

14:00 16:00 Workshops in House C, Cafe Chamonix & Foyer C2
Only pre-registered participants
See page 21 for schedule

Module program continues:

16:00 17:00 Case: Spondyloptosis with high grade spondylolisthesis	Carlos Tucci
16:00 16:05 Case presentation	Jeremy Fairbank
16:05 16:25 Group discussion	All Faculty Members
16:25 16:40 Group presentations	All Faculty Members
16:40 16:45 Expert opinion and lecture	Colin Nnadi
16:45 16:50 Case solution	Jeremy Fairbank
16:50 16:55 Summary of findings & Take home messages	Carlos Tucci
16:55 17:00 Evaluation	
17:00 18:00 Participants' cases session Cases from participants	Darrel Brodke
17:00 17:05 Case Presentation	
17:05 17:10 Discussion	All Faculty Members
17:10 17:15 Summary of findings	Eric Klineberg
17:15 17:20 Case presentation	
17:20 17:25 Discussion	All Faculty Members
17:25 17:30 Summary of findings	John Hutchinson
17:30 17:35 Case Presentation	
17:35 17:40 Discussion	All Faculty Members
17:40 17:45 Summary of findings	Rolf Riise
17:45 17:50 Case Presentation	
17:50 17:55 Discussion	All Faculty Members
17:55 18:00 Summary of findings	Claudio Lamartina

Thursday Morning Sessions

Thursday 18 December Morning sessions (Day 4)

Upper Cervical Spine Room Seehorn—House A

Start	End	Title	Moderators/Faculty
08:00	09:00	Case: Upper cervical epidural abscess	Shanmuganathan Rajasekaran
08:00	08:05	Case presentation	Abulrazzaq Alobaid
08:05	08:25	Group discussion	All Faculty Members
08:25	08:40	Group presentations	All Faculty Members
08:40	08:45	Expert opinion and lecture	Ghassan Skaf
08:45	08:50	Case solution	Abulrazzaq Alobaid
08:50	08:55	Summary of findings & Take home messages	Shanmuganathan Rajasekaran
08:55	09:00	Evaluation	
09:00	10:00	Case: Failed C2 screw fix for an odontoid fracture	Klaus Schnake
09:00	09:05	Case presentation	Bronek Boszczyk
09:05	09:25	Group discussion	All Faculty Members
09:25	09:40	Group presentations	All Faculty Members
09:40	09:45	Expert opinion and lecture	Klaus Schnake
09:45	09:50	Case solution	Bronek Boszczyk
09:50	09:55	Summary of findings & Take home messages	Klaus Schnake
09:55	10:00	Evaluation	
10:00	10:30	Coffee break in House C, Foyer C1	
10:30	11:30	Case: Late diagnosis of rotatory C1/2 dislocation in children	Osmar Moraes
10:30	10:35	Case presentation	Alexandre Sadao Iutaka
10:35	10:55	Group discussion	All Faculty Members
10:55	11:10	Group presentations	All Faculty Members
11:10	11:15	Expert opinion and lecture	Juan Emmerich
11:15	11:20	Case solution	Alexandre Sadao Iutaka
11:20	11:25	Summary of findings & Take home messages	Osmar Moraes
11:25	11:30	Evaluation	
11:30	12:30	Case: Basilar impression	Klaus Schnake
11:30	11:35	Case presentation	Ghassan Skaf
11:35	11:55	Group discussion	All Faculty Members
11:55	12:10	Group presentations	All Faculty Members
12:10	12:15	Expert opinion and lecture	Shanmuganathan Rajasekaran
12:15	12:20	Case solution	Ghassan Skaf
12:20	12:25	Summary of findings & Take home messages	Klaus Schnake
12:25	12:30	Evaluation	

Please note that the program continues at 12.30 and that lunch is served inside the session rooms

Solutions for Complex Cases Room Sanada 1—House C

Start	End	Title	Moderators/Faculty
08:00	09:00	Case: Basilar invagination in an OI patient	Peter Vajkoczy
08:00	08:05	Case presentation	Michael Fehlings
08:05	08:25	Panel	Claudius Thome, John Duff, Youssef El Hawary
08:25	08:40	Discussion	All Faculty Members
08:40	08:45	Expert opinion and lecture	Gomatam Vijay Kumar
08:45	08:50	Case solution	Michael Fehlings
08:50	08:55	Summary of findings & Take home messages	Peter Vajkoczy
08:55	09:00	Evaluation	
09:00	10:00	Case: C2/3 chordoma	Youssef El Hawary
09:00	09:05	Case presentation	Claudius Thome
09:05	09:25	Group discussion	All Faculty Members
09:25	09:40	Group presentations	All Faculty Members
09:40	09:45	Expert opinion and lecture	John Duff
09:45	09:50	Case solution	Claudius Thome
09:50	09:55	Summary of findings & Take home messages	Youssef El Hawary
09:55	10:00	Evaluation	
10:00	10:30	Coffee break in House C, Foyer C1	
10:30	11:30	Case: Congenital deformity with a complication cascade	Haluk Berk
10:30	10:35	Case presentation	Emre Acaroglu
10:35	10:55	Group discussion	All Faculty Members
10:55	11:10	Group presentations	All Faculty Members
11:10	11:15	Expert opinion and lecture	Michael Fehlings
11:15	11:20	Case solution	Emre Acaroglu
11:20	11:25	Summary of findings & Take home messages	Haluk Berk
11:25	11:30	Evaluation	
11:30	12:30	Case: Late infection in an instrumented spine	Robert Dunn
11:30	11:35	Case presentation	Haluk Berk
11:35	11:55	Group discussion	All Faculty Members
11:55	12:10	Group presentations	All Faculty Members
12:10	12:15	Expert opinion and lecture	Emre Acaroglu
12:15	12:20	Case solution	Haluk Berk
12:20	12:25	Summary of findings & Take home messages	Robert Dunn
12:25	12:30	Evaluation	

Please note that the program continues at 12.30 and that lunch is served inside the session rooms

Cervical Degenerative Disease Room Sanada 2—House C

Start	End	Title	Moderators/Faculty
08:00	09:00	Case: Axial neck pain	YH Yau
08:00	08:05	Case presentation	Philip Horsting
08:05	08:25	Group discussion	All Faculty Members
08:25	08:40	Group presentations	All Faculty Members
08:40	08:45	Expert opinion and lecture	Eung Ha Kim
08:45	08:50	Case solution	Philip Horsting
08:50	08:55	Summary of findings & Take home messages	Luca Papavero
08:55	09:00	Evaluation	
09:00	10:00	Case: Spondylotic cervical radiculopathy	Luca Papavero
09:00	09:05	Case presentation	Richard Emery
09:05	09:25	Group discussion	All Faculty Members
09:25	09:40	Group presentations	All Faculty Members
09:40	09:45	Expert opinion and lecture	Jean Jacques Abitbol
09:45	09:50	Case solution	Richard Emery
09:50	09:55	Summary of findings & Take home messages	Yoshiharu Kawaguchi
09:55	10:00	Evaluation	
10:00	10:30	Coffee break in House C, Foyer C1	
10:30	11:30	Case: Spondylotic cervical myelopathy	Yoshihara Kawaguchi
10:30	10:35	Case presentation	Roberto Chapa
10:35	10:55	Group discussion	All Faculty Members
10:55	11:10	Group presentations	All Faculty Members
11:10	11:15	Expert opinion and lecture	John Liu
11:15	11:20	Case solution	Roberto Chapa
11:20	11:25	Summary of findings & Take home messages	Jean Jacques Abitbol
11:25	11:30	Evaluation	
11:30	12:30	Case: Ossification of the posterior longitudinal ligament in the cervical spine	Jean Jacques Abitbol
11:30	11:35	Case presentation	Bharat Dave
11:35	11:55	Group discussion	All Faculty Members
11:55	12:10	Group presentations	All Faculty Members
12:10	12:15	Expert opinion and lecture	Yoshiharu Kawaguchi
12:15	12:20	Case solution	Bharat Dave
12:20	12:25	Summary of findings & Take home messages	John Liu
12:25	12:30	Evaluation	

Please note that the program continues at 12.30 and that lunch is served inside the session rooms

Thoracolumbar Trauma Room Aspen 1—House C

Start	End	Title	Moderators/Faculty
08:00	09:00	Case: Nonoperative treatment of thoracolumbar fractures	Roger Härtl
08:00	08:05	Case presentation	Mohammad El-Sharkawi
08:05	08:25	Group discussion	All Faculty Members
08:25	08:40	Group presentations	All Faculty Members
08:40	08:45	Expert opinion and lecture	Nasir Quraishi
08:45	08:50	Case solution	Mohammad El-Sharkawi
08:50	08:55	Summary of findings & Take home messages	Thomas Chen
08:55	09:00	Evaluation	
09:00	10:00	Case: Burst thoracolumbar fracture (type A3 & A4)	Thomas Chen
09:00	09:05	Case presentation	Abdulaziz Al-Mutair
09:05	09:25	Group discussion	All Faculty Members
09:25	09:40	Group presentations	All Faculty Members
09:40	09:45	Expert opinion and lecture	Zdenek Klezl
09:45	09:50	Case solution	Abdulaziz Al-Mutair
09:50	09:55	Summary of findings & Take home messages	Robert Crawford
09:55	10:00	Evaluation	
10:00	10:30	Coffee break in House C, Foyer C1	
10:30	11:30	Case: Type C thoracolumbar fractures	Patrick Hsieh
10:30	10:35	Case presentation	Nasir Quraishi
10:35	10:55	Group discussion	All Faculty Members
10:55	11:10	Group presentations	All Faculty Members
11:10	11:15	Expert opinion and lecture	Frank Kandziora
11:15	11:20	Case solution	Nasir Quraishi
11:20	11:25	Summary of findings & Take home messages	Frank Kandziora
11:25	11:30	Evaluation	
11:30	12:30	Case: Chance fractures	Zdenek Klezl
11:30	11:35	Case presentation	Robert Crawford
11:35	11:55	Group discussion	All Faculty Members
11:55	12:10	Group presentations	All Faculty Members
12:10	12:15	Expert opinion and lecture	Thomas Chen
12:15	12:20	Case solution	Robert Crawford
12:20	12:25	Summary of findings & Take home messages	Luiz Vialle
12:25	12:30	Evaluation	

Please note that the program continues at 12.30 and that lunch is served inside the session rooms

The Aging Spine— Adult Deformity Room Aspen 2—House C

Start	End	Title	Moderators/Faculty
08:00	09:00	Case: Surgical nuances in the aging spine	
08:00	08:05	Case presentation	Colin Nnadi
08:05	08:25	Group discussion	All Faculty Members
08:25	08:40	Group presentations	All Faculty Members
08:40	08:45	Expert opinion and lecture	John DeVine
08:45	08:50	Case solution	Carlos Tucci
08:50	08:55	Summary of findings & Take home messages	Colin Nnadi
08:55	09:00	Evaluation	
09:00	10:00	Case: S1/2 fracture after fusion with deformity	Claudio Lamartina
09:00	09:05	Case presentation	Rolf Riise
09:05	09:25	Group discussion	All Faculty Members
09:25	09:40	Group presentations	All Faculty Members
09:40	09:45	Expert opinion and lecture	Jeremy Fairbank
09:45	09:50	Case solution	Rolf Riise
09:50	09:55	Summary of findings & Take home messages	Claudio Lamartina
09:55	10:00	Evaluation	
10:00	10:30	Coffee break in House C, Foyer C1	
10:30	11:30	Case: Incomplete correction with minimally invasive techniques	Rolf Riise
10:30	10:35	Case presentation	John France
10:35	10:55	Group discussion	All Faculty Members
10:55	11:10	Group presentations	All Faculty Members
11:10	11:15	Expert opinion and lecture	Carlos Tucci
11:15	11:20	Case solution	John France
11:20	11:25	Summary of findings & Take home messages	Rolf Riise
11:25	11:30	Evaluation	
11:30	12:30	Case: Failed fixation and complications of the aging spine	Jeremy Fairbank
11:30	11:35	Case presentation	Ian Harding
11:35	11:55	Group discussion	All Faculty Members
11:55	12:10	Group presentations	All Faculty Members
12:10	12:15	Expert opinion and lecture	Claudio Lamartina
12:15	12:20	Case solution	Ian Harding
12:20	12:25	Summary of findings & Take home messages	Jeremy Fairbank
12:25	12:30	Evaluation	

Please note that the program continues at 12.30 and that lunch is served inside the session rooms

Thursday Afternoon Sessions

Thursday 18 December Afternoon sessions (Day 4)

Upper Cervical Spine Room Seehorn—House A

Start	End	Title	Moderators/Faculty
12:30	13:30	Case: C2 aggressive benign tumor in a young patient	Alexandre Sadao
12:30	12:35	Case presentation	Shanmuganathan Rajasekaran
12:35	12:55	Group discussion	All Faculty Members
12:55	13:10	Group presentations	All Faculty Members
13:10	13:15	Expert opinion and lecture	Juan Emmerich
13:15	13:20	Case solution	Shanmuganathan Rajasekaran
13:20	13:25	Summary of findings & Take home messages	Alexandre Sadao
13:25	13:30	Evaluation	
13:30	14:30	Participants' cases session Cases from participants	Osmar Moraes Marcelo Gruenberg
13:30	13:35	Case Presentation	
13:35	13:40	Discussion	All Faculty Members
13:40	13:45	Summary of findings	
13:45	13:50	Case presentation	
13:50	13:55	Discussion	All Faculty Members
13:55	14:00	Summary of findings	
14:00	14:05	Case Presentation	
14:05	14:10	Discussion	All Faculty Members
14:10	14:15	Summary of findings	
14:15	14:20	Case Presentation	
14:20	14:25	Discussion	All Faculty Members
14:25	14:30	Summary of findings	
AOSpine Davos Courses 2014 finish			

Solutions for Complex Cases Room Sanada 1—House C

Start	End	Title	Moderators/Faculty
12:30	13:30	Case: LBP in a multioperated patient	John Duff
12:30	12:35	Case presentation	Teija Lund
12:35	12:55	Debate: Is it reasonable to try one more time	Emre Acaroglu(yes) Youssry El Hawary(no)
12:55	13:10	Discussion	All Faculty Members
13:10	13:15	Expert opinion and lecture	Robert Dunn
13:15	13:20	Case solution	Teija Lund
13:20	13:25	Summary of findings & Take home messages	John Duff
13:25	13:30	Evaluation	
13:30	14:30	Participants' cases session Cases from participants	Peter Vajkoczy Gomatam Vijay Kumar
13:30	13:35	Case Presentation	
13:35	13:40	Discussion	All Faculty Members
13:40	13:45	Summary of findings	
13:45	13:50	Case presentation	
13:50	13:55	Discussion	All Faculty Members
13:55	14:00	Summary of findings	
14:00	14:05	Case Presentation	
14:05	14:10	Discussion	All Faculty Members
14:10	14:15	Summary of findings	
14:15	14:20	Case Presentation	
14:20	14:25	Discussion	All Faculty Members
14:25	14:30	Summary of findings	
AOSpine Davos Courses 2014 finish			

Cervical Degenerative Disease Room Sanada 2—House C

Start	End	Title	Moderators/Faculty
12:30	13:30	Case: Complications in cervical surgery	John Liu
12:30	12:35	Case presentation	Robert Meves
12:35	12:55	Group discussion	All Faculty Members
12:55	13:10	Group presentations	All Faculty Members
13:10	13:15	Expert opinion and lecture	Luca Papavero
13:15	13:20	Case solution	Robert Meves
13:20	13:25	Summary of findings & Take home messages	Eung Ha Kim
13:25	13:30	Evaluation	
13:30	14:30	Participants' cases session Cases from participants	Eung Ha Kim
13:30	13:35	Case Presentation	
13:35	13:40	Discussion	All Faculty Members
13:40	13:45	Summary of findings	
13:45	13:50	Case presentation	
13:50	13:55	Discussion	All Faculty Members
13:55	14:00	Summary of findings	
14:00	14:05	Case Presentation	
14:05	14:10	Discussion	All Faculty Members
14:10	14:15	Summary of findings	
14:15	14:20	Case Presentation	
14:20	14:25	Discussion	All Faculty Members
14:25	14:30	Summary of findings	
AOSpine Davos Courses 2014 finish			

Thoracolumbar Trauma Room Aspen 1—House C

Start	End	Title	Moderators/Faculty
12:30	13:45	Case: Thoracolumbar fractures in osteoporotic bone	Abdulaziz Al-Mutair
12:30	12:35	Case presentation	Zdenek Klezl
12:35	12:55	Group discussion	All Faculty Members
12:55	13:10	Group presentations	All Faculty Members
13:10	13:15	Expert opinion and lecture	Mohammad El-Sharkawi
13:15	13:20	Case solution	Zdenek Klezl
13:20	13:25	Summary of findings & Take home messages	Nasir Quraishi
13:25	13:40	Expert opinion and lecture MIS in thoracic spine fractures	Roger Härtl
13:40	13:45	Evaluation	
13:45	14:30	Participants' cases session Cases from participants	Zdenek Klezl
13:45	13:50	Case Presentation	
13:50	13:55	Discussion	All Faculty Members
13:55	14:00	Summary of findings	
14:00	14:05	Case presentation	
14:05	14:10	Discussion	All Faculty Members
14:10	14:15	Summary of findings	
14:15	14:20	Case Presentation	
14:20	14:25	Discussion	All Faculty Members
14:25	14:30	Summary of findings	
AOSpine Davos Courses 2014 finish			

The Aging Spine— Adult Deformity Room Aspen 2—House C

Start	End	Title	Moderators/Faculty
12:30	13:30	Case: Cervical spine osteotomies and deformity correction	Eric Klineberg
12:30	12:35	Case presentation	John Hutchinson
12:35	12:55	Group discussion	All Faculty Members
12:55	13:10	Group presentations	All Faculty Members
13:10	13:15	Expert opinion and lecture	John Hutchinson
13:15	13:20	Case solution	John Hutchinson
13:20	13:25	Summary of findings & Take home messages	Eric Klineberg
13:25	13:30	Evaluation	
13:30	14:30	Participants' cases session Cases from participants	Darrel Brodke
13:30	13:35	Case Presentation	
13:35	13:40	Discussion	All Faculty Members
13:40	13:45	Summary of findings	John DeVine
13:45	13:50	Case presentation	
13:50	13:55	Discussion	All Faculty Members
13:55	14:00	Summary of findings	John France
14:00	14:05	Case Presentation	
14:05	14:10	Discussion	All Faculty Members
14:10	14:15	Summary of findings	Jeremy Fairbank
14:15	14:20	Case Presentation	
14:20	14:25	Discussion	All Faculty Members
14:25	14:30	Summary of findings	Ian Harding
AOSpine Davos Courses 2014 finish			

Business centers

There are business center facilities in the Congress Center which are accessible to course participants.

Services

- Internet and email access
- Document printing

Location

The business centers are available in various locations in the Congress Center.

Opening hours

30 minutes before the first course of the day starts until
30 minutes after the last course ends.

Disclaimer

The use of your own computer in the Business Center network is not secure. We strongly recommend that you take appropriate actions to protect your computer against unauthorized use or theft (eg, Firewall, VPN connection, Virus scanner, etc). AO cannot be held responsible for any data loss or theft.

For further information or support please contact:

AO Foundation

Phone: +41 81 414 28 70

Email: it.support@aofoundation.org

Wireless network

A special wireless network is accessible and free for course participants.

Services

- Internet and email access

Locations

- At public places in the Congress Center

How to connect

- Open the wireless network connection window
- Choose the "AOBusiness" network as shown in the picture below and click on the "Connect button"



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- Press the "OK" button

- The "AOBusiness" network requires a network key:

Exhibitions and ARI

AO World

Visit the AO World in the main foyer of the Congress Center to explore the AO's Clinical Divisions and Institutes. Learn more about AOTrauma, AOSpine, AOCMF, AONeuro, AORecon and AOVET. At the Clinical Division exhibits you can explore membership opportunities and experience the award winning Surgery Reference, examine our print and electronic publications, learn about the ground-breaking activities occurring within AO, and discover the research, development, fellowship, and other opportunities available to you. You can also visit Clinical Investigation and Documentation (AOCID), the AO Research Institute Davos (ARI) and the Technische Kommission (AOTK).

Industry exhibitions

Visit our industry partner DePuy Synthes, and other industry providers OPED AG, Otto Bock, Siemens, and Synbone to discover their latest advances in technology.

AO Research Institute Davos (ARI)

Mission

Excellence in applied preclinical research and development within trauma and disorders of the musculoskeletal system and translation of this knowledge to achieve more effective patient care worldwide.

Goals

- Contribute high quality applied preclinical research and development (exploratory and translational) focused on clinical applications/solutions
- Investigate and improve the performance of surgical procedures, devices and substances
- Foster a close relationship with the AO medical community, academic societies, and universities
- Provide research environment/support for AO clinicians.

At the AO World booths, meet with our team including our ARI Medical Research Fellows, establish contacts, freely discuss your clinical problems, ideas, and learn about the latest results from the ARI.

A visit to the AO Center will demonstrate our infrastructure and enable you to meet some of our research team.

Areas:

Exploratory Collaborative Research Programs

- Large Bone Defect Healing
- Annulus Fibrosus Rupture
- Acute Cartilage Injury

Craniomaxillofacial

- Imaging and planning of surgery, computer aided preoperative planning
- Preclinical model development for Bisphosphonate-Related Osteonecrosis of the Jaw

Spine

- Degeneration and regeneration of the intervertebral disc
- Fracture fixation in osteoporotic bone

Trauma

- Bone infection, including minimizing infection risk through implant design, diagnostics of infection through novel imaging techniques
- Fracture fixation in osteoporotic bone including intraoperative assessment of bone quality, augmentation techniques and prophylaxis
- Evaluation of the cortical and trabecular bone remodeling (with special regards to the porosity) in the proximal humerus and its impact on the fracture zones.

Other disciplines

Veterinary Medicine

- External fixation implants for large animals
- Development of new implants for small animals

Multidisciplinary

- Analysis of implant-specific functional anchorage with CT-technology
- Ex-vivo testing using advanced biomechanical models
- In-vivo studies using established or newly developed preclinical models
- Gene transfer—non viral and viral
- Implant design using the Finite Element Methods
- Implant positioning assistance, C-arm guided implant placement
- Telemetric monitoring of bone healing
- In vivo and in vitro quantification of bone turnover and scaffold degradation
- Longitudinal analysis within in-vivo studies using CT-technology
- Medical image processing and analysis
- Polymers to deliver cells and biological factors, create potential space for tissue development and guide the process of tissue regeneration
- Prototype development and production
- Stem cell therapies for the treatment of bone, intervertebral disc and cartilage defects
- Bioreactor culture systems and mechanobiology
- Surface modification of PEEK to improve tissue integration
- Thermosresponsive gel for delivery of antibiotics, stem cells, growth factors, transfected cells etc.

For the 2014 AO Research Institute Davos activity report and recent publications go to: www.aofoundation.org/ari/publications

Education

AO Surgery Reference— new spine module

Thoracolumbar Trauma

Contributors:

**L. Vialle, A. Vaccaro,
F. Kandziora, M. Fehlings,
R. Shanmuganathan**



Keynote lecture on
Thoracolumbar Trauma

Tuesday December 16,
13.00–14.00 in room Sanada

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Visit to AO Center and Sponsors

There is a special bus for course participants that wish to visit the headquarters of the AO Foundation. Register at the Welcome Desk in the main entrance of the Congress Center.

Tuesday

18:15 From the Congress Center to the AO Center
20.15 From the AO Center to the Congress Center

Sponsors

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- A highly-regarded scientific program with the participation of spine societies from all over the world
- Lively debates and high level of interaction between participants and our renowned international faculty



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