



Global Spine Congress
2017

Final Program

Your guide to the schedule
and venue



Global Spine Congress
Milan, Italy | May 3–6, 2017

www.gsc2017.org



Join our global spine care community

AOSpine membership

Gain access to numerous privileges, including the most advanced educational programs, a worldwide network of professionals, and the highest quality of research carried out by experts and key opinion leaders in spine care.

AOSpine is the largest organization for spine surgeons in the world.

It is an unparalleled opportunity to become friends with and visit **top spine surgeons, educators, and researchers all over the world.**

Dan Riew
AOSpine International
Chairperson



Education

Never stop learning,
never stop improving



Research

Research that matters,
improving patient care



Networking

Join the best professionals
in the field



Advantages

A membership with
lots of privileges



**Advancing spine
care worldwide**

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

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Global Spine Congress 2017

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Welcome



Welcome to the **Global Spine Congress 2017** (GSC)! It is the 6th annual meeting for AOSpine, showcasing the very latest approaches to spine care.

The GSC provides an outstanding forum to exchange ideas, network with fellow spine professionals, and learn about the latest research, techniques, and technologies in spine surgery.

The GSC is the most important academic annual meeting and one of the biggest gatherings of the global spine community.

This year, the GSC will feature a unique scientific program, with parallel sessions covering more than 25 topics, and showcase all the latest technologies and cutting-edge innovations in spine surgery. The Scientific Program of the event will include precourses, AOSpine Symposia, Society Symposia, and peer reviewed abstracts—scheduled to be presented as oral or E-posters presentations, as well as AOSpine members-only sessions on various topics. We are delighted to state that for this year's event, a total of 1,048 abstracts were submitted. This is the highest number of abstracts ever submitted for the GSC!

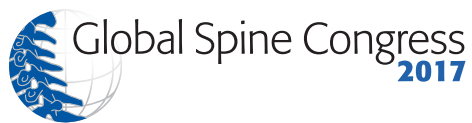
We are convinced that the presented scientific program will encourage lively discussions among participants and generate new ideas to help advance spine care. We hope you will find it a valuable and rewarding experience.

Finally, we would like to extend our sincere appreciation and gratitude to the spine societies, moderators, speakers, sponsors, and exhibitors, whose contributions help to make this global event possible.

We are very much looking forward to this outstanding event and its exclusive approach to exchanging knowledge.

Organizing Committees

Executive Committee



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Alessandro Ducati (Italy)—Local Chair
Giovanni Barbanti-Bròdano (Italy)—Local Co-Chair

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Eugen Popescu

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Tamas Doczi (Hungary)	Jesus Lafuente (Spain)	Daisuke Sakai (Japan)	

Venue and Registration

MiCo Milano Congressi

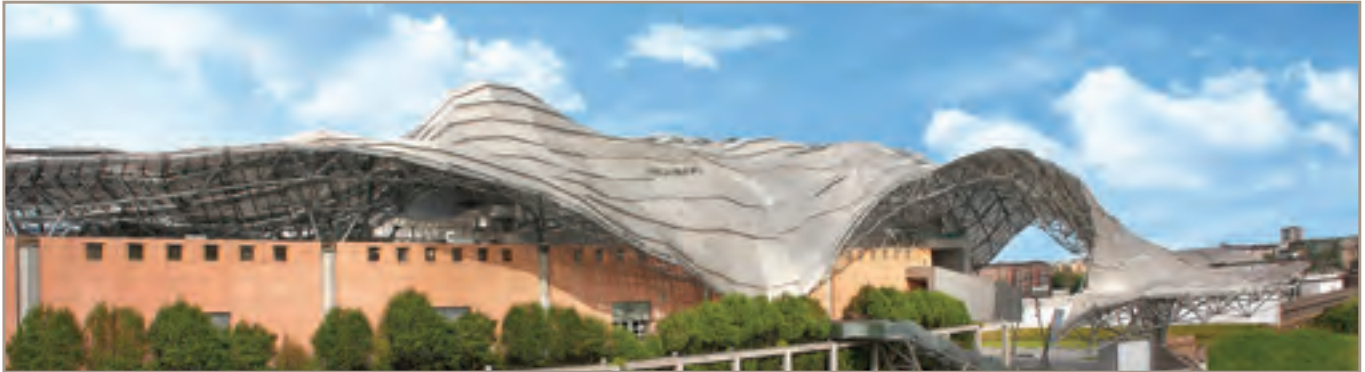
MiCo – Milano Congressi

Pedestrian access to GSC 2017

North Wing Entrance – Gate nr 14-15

Address – Via Gattamelata nr 5, Milano

www.micomilano.it



The Global Spine Congress 2017 takes place at MiCo Milano Congressi, one of Europe's largest and most famous convention centers. Designed by architects Mario Bellini and Pierluigi Nicolini, this brand new complex houses an exceptional space, together with modern equipment, the full range of technologies, and comfortable spacious areas.

The venue is conveniently located downtown Milan with a parking lot for more than 1,100 cars and direct access to Milan's new subway line 5.

Registration

Registration Desk opening times

The Registration Desk, located on the first floor of the MiCo Milano Congressi, is open during Congress days according to the following schedule:

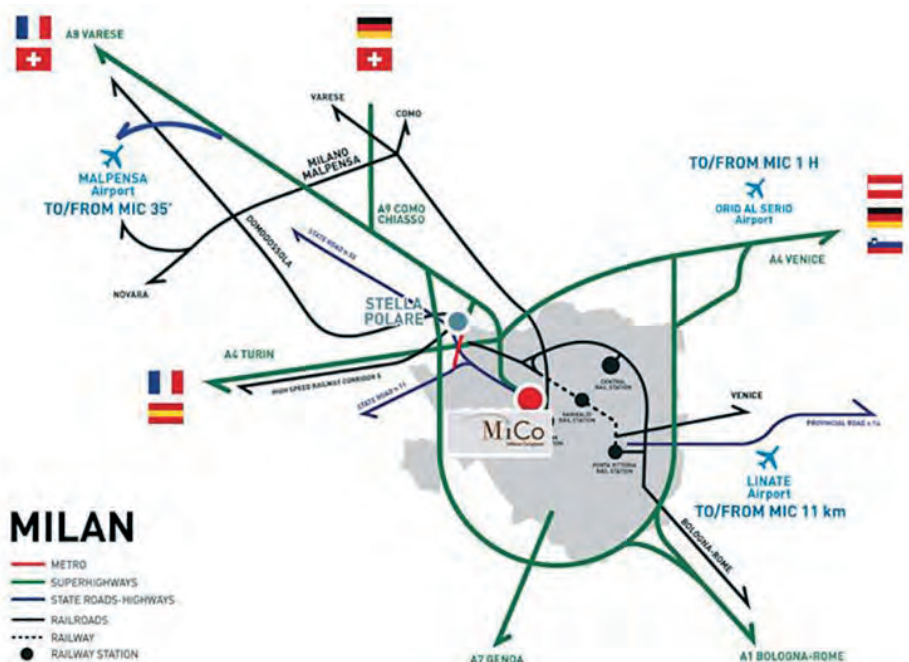
Wednesday, May 3	10:30–18:30
Thursday, May 4	07:30–19:30
Friday, May 5	07:00–19:00
Saturday, May 6	07:30–13.30

Pre-paid registration

An email will be sent to individual participants upon completion of the registration process. This confirmation must be presented at the registration desk on-site at the congress in order to receive the congress kit and access badge.

On-site registration

On-site registration is possible from Wednesday, May 3 to Saturday, May 6. Both credit cards (AMEX, VISA and MASTERCARD) and cash are accepted on-site.



For the Congress, reduced rates on hotel accommodation are available close to the Congress Venue. For any questions or logistics information, please contact the Organizing Secretariat:

Organizing Secretariat
OIC srl
Viale G. Matteotti, 7
50121 Florence, Italy
Tel +39 055 5035 1
Fax +39 055 5035 230
registrationGSC2017@oic.it



AOSpine Member Assembly



The AOSpine International Board cordially invites you to join the Member Assembly on May 4, 2017 from 07:30 to 08:00. It is an excellent opportunity to learn more about AOSpine, meet old and make new friends, and network with the world's most outstanding spine surgeon community.

We look forward to seeing you there!

Follow us live on Twitter during
the Global Spine Congress
@AOSpine #gscmilan2017



Registration

Registration fee	ON-SITE April 25–May 6, 2017		
Aospine Member Physician ¹	€ 750	Precourses ⁶	€ 170
Aospine Member Medical/Research Student, Resident, Fellow ²	€ 220	Day Rate AOSpine Member: Thursday/Friday	€ 350
Aospine Member Physician Assistant and Nurse Practitioner	€ 375	Day Rate Non-Member: Thursday/Friday	€ 485
Non-Member Physician	€ 890	Day Rate AOSpine Member: Saturday	€ 175
Non-Member Medical/Research Student, Resident, Fellow ²	€ 290	Day Rate Non-Member: Saturday	€ 285
Non-Member Physician Assistant And Nurse Practitioner	€ 510		
Delegate From Low Income Country ³	€ 600		
Industry Representative ⁴	€ 885		
Accompanying Person ⁵	€ 36		

Delegate registration fee includes:

- Full access to the scientific sessions and exhibition (precourses not included)
- Admission to the lunch symposia (organized by the industry)
- Congress bag with final program and further scientific material
- The AOSpine mobile application, including program and abstract book
- Invitation to the Exhibition Opening (Thursday, May 4, from 18:00-19:30)
- Coffee service
- Certificate of attendance
- Name badge

Accompanying person registration fee includes:

Invitation to the Exhibition Opening
(Thursday, May 4, from 18:00-19:30)

Badge

Each participant receives a name badge upon collecting the congress kit at the Registration Desk. The badge is the official congress accreditation and must be worn at all times. Badges are colour-coded as follows:

Blue – AOSpine Member

Yellow – Exhibitor

Green – Accompanying Person

Ribbons

Member ribbons as well as other ribbons (Participant, Council members, Commission members, etc) will be available at the AOSpine booth. Feel free to pass by and pick up your ribbon!

Registration terms

Please read the following registration terms and conditions carefully before registering. Please note that debits to your credit card will appear as O.I.C. Srl Florence (Italy) on the registration statement.

1. **AOSpine Members receive a EUR 130.– discount on the registration fee.** To benefit from the discount, you will need to become an AOSpine Member before registering. Membership status will be verified by AOSpine. Be aware if your membership is not updated, the "Non-member fee" will be applied.
2. To qualify for the medical/research student fellows/ residents registration fee, a letter of proof from the training program director needs to be sent to: registrationGSC2017@oic.it, or shown at the Registration Desk.
3. World Bank classification 2016. Please visit: www.gsc2017.org to access the list of eligible countries.
4. Industry representatives: Non-clinical professionals, with interests in the spine field, but not treating patients.
5. The accompanying person registration fee includes a badge for the Exhibition Opening (Thursday, May 4, 2017).
6. Only congress registered participants can register for precourses.

Registration Desk and Organizing Secretariat

For any questions or logistics information, please contact:

O.I.C. Srl

Viale G. Matteotti, 7

50121 Florence, Italy

Phone: +39 055 50351

Fax: +39 055 5001912

infoGSC2017@oic.it



Discover the latest AOSpine Sacral Classification System at the Global Spine Congress

Get your
toolkit* at the
**AOSpine
booth!**

Here's what users have
to say about the AOSpine
Classification System:

**It's easy to use,
easy to remember,
and reliable.**

**It puts together
morphologic
characteristics and really
helps with treatment
decision-making.**



Download your toolkit anytime
on the AOSpine website

www.aospine.org/classification

*Also get your Thoracolumbar and Subaxial toolkits at the AOSpine booth.

General Information (from A-Z)

AOSpine booth

Discover the leading global community of spine surgeons by visiting the AOSpine booth. Here, we will be pleased to talk to you and answer any questions you may have about AOSpine and give you further information about AOSpine Education, Research and Community Development. Visit the booth for further details about our activities.

Opening times:

Thursday, May 4, 2017 from 08:00 to 19:30

Friday, May 5, 2017 from 08:00 to 19:00

Saturday, May 6, 2017 from 08:00 to 13:30

Barcode scanning

Participants could be asked by staff from industries at exhibit booths to provide their personal contact data through barcode scanning.

In this way, information about name, surname, country, and e-mail address will be given out to companies on an individual, voluntary basis.

Please do not allow scanning of your badge by industry representatives without your direct consent.

For ITALIAN CME accreditation purposes, participants will be asked from congress staff at meeting room doors for barcode scanning upon entrance and exit of each session. This system is necessary to certify the attendance of those interested to apply for CME accreditation. Please do not allow scanning of your badge if you are not interested in ITALIAN CME credits.

Beverages and food

At the event venue, there is a snack bar close to the exhibition and a number of restaurants and kiosks near to MiCo congress venue.

Certificate of attendance

The certificate of attendance is provided to each participant upon registration in the congress kit.

Coffee breaks

A coffee service is available in the exhibition area during the whole day.

Congress App

The AOSpine GSC mobile application is available for download. It includes the following items and many other practical tools:

- Program
- Abstracts publication
- Real time updating on scientific sessions
- Exhibitors
- Congress venue maps

Available for iOS and Android devices, it requires:

- an iOS device running 7.0 or greater; iPad users please select 'iPhone Only' App in the App Store
- an Android device running 4.0 or greater

Scan the QR codes to get it from your app store!

Apple iOS:



Android:



For any other devices the web App is available at www.gsc2017.org/app

Continuing Medical Education accreditation

The 'Global Spine Congress 2017' is accredited by the European Accreditation Council for Continuing Medical Education (EACCME) to provide the following CME activity for medical specialists. The EACCME is an institution of the European Union of Medical Specialists (UEMS), www.uems.net.

The 'Global Spine Congress 2017' is designated for a maximum of (or 'for up to') 17 hours of European external CME credits. Each medical specialist should claim only those hours of credit that he/she actually spent in the educational activity.

Through an agreement between the European Union of Medical Specialists and the American Medical Association, physicians may convert EACCME credits to an equivalent number of AMA PRA Category 1 Credits™. Information on the process to convert EACCME credit to AMA credit can be found at www.ama-assn.org/go/internationalcme.

Live educational activities, occurring outside of Canada, recognized by the UEMS-EACCME for ECMEC credits are deemed to be Accredited Group Learning Activities (Section 1) as defined by the Maintenance of Certification Program of The Royal College of Physicians and Surgeons of Canada.

The online CME questionnaire will be available at: www.gsc2017.org/cme from May 7 to 28, 2017.

Please note that the registration code, printed on your badge, will be required to access the CME questionnaire.

Discover the latest recommendations from the AOSpine Knowledge Forum Tumor

A wealth of evidence-based treatment recommendations for spine oncology, all in the Focus Issue II, published in Spine—October 15, 2016—Volume 41—Issue 20S.

To find out more about how to access the Focus Issue and other membership benefits, visit the AOSpine booth.



We hope that these recommendations are helpful to the clinicians who are faced with managing these challenging patients.

TOPICS

■ Introduction to Focus Issue II in Spine Oncology: Evidence-based Medicine Recommendations for Spine Oncology

Charles G. Fisher, Laurence D. Rhines, Chetan Bettegowda, Niccolò M. Gersmscheid, Ilya Laufer, Nicolas Dea, Mark H. Bilsky, Jorrit-Jan Verlaan, Jeremy J. Reynolds, Daniel M. Sciubba, Richard Williams, Tamir Ailon, Yoshiya J. Yamada, Peter P. Varga, Stefano Boriani, Ziya L. Gokaslan, and Arjun Sahgal

■ Benign Tumors of the Spine: Has New Chemotherapy and Interventional Radiology Changed the Treatment Paradigm?

Raphaële Charest-Morin, Stefano Boriani, Charles G. Fisher, Shreyaskumar R. Patel, Norio Kawahara, Ehud Mendel, Chetan Bettegowda, and Laurence D. Rhines

■ Management of Locally Recurrent Chordoma of the Mobile Spine and Sacrum: A Systematic Review

Tamir Ailon, Radmehr Torabi, Charles G. Fisher, Laurence D. Rhines, Michelle J. Clarke, Chetan Bettegowda, Stefano Boriani, Yoshiya J. Yamada, Norio Kawahara, Peter P. Varga, John H. Shin, Arjun Sahgal, and Ziya L. Gokaslan

■ Molecular Markers and Targeted Therapeutics in Metastatic Tumors of the Spine: Changing the Treatment Paradigms

C. Rory Goodwin, Nancy Abu-Bonsrah, Laurence D. Rhines, Jorrit-Jan Verlaan, Mark H. Bilsky, Ilya Laufer, Stefano Boriani, Daniel M. Sciubba, and Chetan Bettegowda



General Information (from A-Z)

Crediti formativi—ECM Italia

I crediti formativi ECM saranno certificati dal Provider OIC (2836) secondo la nuova regolamentazione approvata dalla Commissione Nazionale per la Formazione Continua il 13 gennaio 2010 e s.m.i.

Si ricorda la determinazione assunta dalla Commissione Nazionale Formazione Continua, del 15 dicembre 2016, alla luce della quale ogni partecipante potrà maturare 1/3 dei crediti formativi, ricondotti al triennio di riferimento (150 totali per il triennio 2017-2019), mediante reclutamento diretto da parte dello sponsor.

L'accreditamento del Congresso sarà effettuato per l'intero evento (dal 4 al 6 maggio) in un'unica soluzione.

I crediti assegnati al Congresso (evento Nr. 191125 ed.1) sono 5,7 e sono rivolti a Medici Specialisti in Medicina Fisica e Riabilitazione, Medicina Termale, Neurochirurgia, Ortopedia e Traumatologia e Radiodiagnostica, ed a Infermieri e Fisioterapisti.

Si ricorda che avranno diritto ai crediti ECM solo coloro che saranno presenti almeno all'90% dell'intero programma scientifico congressuale accreditato, dal 4 al 6 maggio— escluse le sessioni Members-only, Member Assembly, Member Representative Election.

La rilevazione delle presenze avverrà tramite l'utilizzo di scanner elettronici posizionati presso l'ingresso delle Sale dove si svolgono le sessioni accreditate. Si raccomanda vivamente ai partecipanti di recarsi presso la postazione e di far registrare ogni ingresso e ogni uscita. L'assenza di una sola delle timbrature necessarie determinerà l'impossibilità di assegnazione dei crediti.

Per completare l'acquisizione dei crediti il partecipante dovrà compilare l'apposita certificazione di autoapprendimento nonché il questionario di valutazione dell'evento sul sito

www.gsc2017.org/cme disponibile **dal 7 maggio al 28 maggio 2017**, unitamente ai propri dati anagrafici e all'eventuale reclutamento da parte di uno Sponsor.

Per accedere alla sezione crediti formativi ECM sul sito è indispensabile inserire il codice di registrazione stampato sul badge nominativo consegnato in sede congressuale.

Ricordiamo che sarà obbligo e cura del partecipante interessato ai crediti ECM di completare detto percorso. I certificati saranno inviati dal Provider dopo aver provveduto alla verifica di entrambi i parametri.

Soltanto i relatori che abbiano svolto una relazione nell'ambito del programma scientifico accreditato per almeno 1/2 ora continuativa potranno richiedere i crediti docenti in ragione di 1 credito per ogni 1/2 ora. Gli interessati potranno rivolgersi al Desk segreteria.

Ricordiamo che i relatori potranno accedere ai crediti in qualità di discenti, fermo restando il rispetto dei parametri di presenza e l'accesso alle procedure sopra indicati.

Non sono previsti crediti per tutti gli altri relatori e per i moderatori partecipanti all'evento.

Disclaimer

AOSpine, the organizer of the Global Spine Congress, and OIC srl, the Organizing Secretariat, will not be held liable for personal injuries or for loss or damage to property incurred by participants or guests at the congress. Participants and guests are encouraged to take out insurance to cover loss incurred in the event of cancellation, medical expenses, or damage to, or loss of personal belongings when traveling.

AOSpine International and OIC srl cannot be held liable for any disruption of the Global Spine Congress proceedings arising from natural, political, social, or economic events or other unforeseen circumstances beyond its control. Registration of a participant or guest confirms acceptance of this condition.

The materials presented at the meeting sessions are made available for educational purposes only. The material is not intended to represent the only (or optimal) methods or procedures appropriate for the medical situations discussed, but rather is intended to present an approach, view, statement, or opinion of the presenters or faculty that may be helpful to others who face similar situations.

Official photographers will be present at this event, therefore, please note that any photographs taken at the meeting may be used in future AOSpine publications, on the AOSpine web site, or in other materials.

Other picture taking and video or audio recording of lectures and sessions are strictly prohibited.

E-posters

GSC posters will be presented in electronic format as E-posters available at the computers located in the exhibition area.

Posters are all available in the AOSpine GSC app.

Registration to the event is mandatory for all presenters.

Exhibition

A trade show exhibition is being held during the event providing the opportunity to show the latest innovative techniques to maximize interaction between participants and sponsor representatives.

Coffee stations are available in the exhibition area during the whole day and computer workstations are located within this area for E-posters consultations.

Education

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Luiz Vialle—General Editor

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General Information (from A-Z)

Exhibition hours

Thursday, May 4, 2017 from 08:00 to 19:30

Friday, May 5, 2017 from 08:00 to 19:00

Saturday, May 6, 2017 from 08:00 to 13:30

Industry Symposia

A number of industry Instructional Course Lectures (ICLs) that include food will be held on Thursday to Friday (check program for exact time and location).

Language

The official language of the Global Spine Congress is English.

Learning objectives

Upon completion of this program, participants should be able to:

- Discuss the latest developments in basic research for spinal disorders
- Recognize and outline the latest developments in clinical treatments for spinal disorders
- Describe the appropriate patient selection and diagnostic methods for spine surgery
- Outline evidence that justifies clinical outcomes of patient treatments

Lost and found

Lost and found items can be recovered at the Registration Desk.

Mobile phone and camera use

The use of mobile phones and cameras is not permitted during the scientific sessions. Participants are kindly requested to keep their mobile phones turned off during the scientific sessions.

No smoking policy

Smoking is not permitted at any time. In accordance with the local regulations, this event follows a strict non-smoking policy.

Scientific paper sessions

There will be 52 scientific paper sessions scheduled over the course of the meeting, covering the main spine topics with original podium presentation. More than 350 peer reviewed abstracts by the Program Committee will be presented in 4-minute presentations. Each session will have a 15-minute discussion.

As the scientific program consists of parallel sessions, speakers are required to respect the allotted time given for their presentations. This will contribute to the smooth running of the scheduled sessions. Registration to the Global Spine Congress is mandatory for oral presenters.

Speakers center

This office is located close to the exhibition and plenary (Red) room.

During the following times, staff and equipment will be available for speakers to deliver their PowerPoint presentations:

Wednesday, May 3 10:30–18:30

Thursday, May 4 07:30–19:30

Friday, May 5 07:00–19:00

Saturday, May 6 07:30–13.30

Only computer projection is available in the meeting rooms and it is not possible to directly use personal laptops at the podium. PowerPoint presentations (Windows or Apple) on USB pens, memory sticks or personal laptops must be delivered to the slide preview desk as follows:

- **Presenters with PowerPoint presentations on USB pen:** report to the slide preview desk at least one hour before the session or the day before in case of early morning presentations.
- **Presenters with presentations on personal laptop and/or using MACINTOSH/APPLE:** report to the slide preview desk at least two hours before the session or the day before in case of early morning presentations in order to convert the file into Windows format and/or download the presentation onto the main system.
- **Presenters with video presentations:** MP4 video extension (codec H264) format with the name of the presenting author must be delivered to the slide preview desk at least two hours before the session or the day before in case of early morning presentations.

The indicated timings allow a smooth uploading of all presentations to the central computerized network and a swift transmission to the assigned meeting rooms. Staff members at the slide preview desk are also available to help those speakers wishing to rehearse their presentations.

Symposia

There will be 22 scientific symposia during the three day meeting, covering the latest research and topics in spine surgery. The symposia consist of didactic lectures presented by international speakers followed by a discussion session.

Target audience

The meeting is targeted at all spine surgeons, orthopedic and neurosurgeons, researchers, or anyone aiming to further improve their knowledge in the latest developments, current concepts, and the future of spine care.

WiFi

WiFi is available for congress participants throughout the convention area; please check network and password at the Registration Desk.

Education

Calling all AOSpine Past Fellows!

We have exclusive sessions and activities just for you at the Global Spine Congress.

Friday 5th May	Past Fellows only sessions ROOM YELLOW 2
10:30–11:30	AOSpine Past Fellows Research Session
11:30–12:30	Past Chairpersons of AOSpine Encouraging Leaders
19:00–20:00	Reception for Past Fellows



December 11-13, 2017
Davos, Switzerland



Education

DAVOS COURSES

Over three days, our distinguished, worldwide faculty members will share with you their highly advanced knowledge and experiences in the field of spine surgery.

At the AOSpine Davos Courses 2017, you can select one of the following educational courses:

1. **Degenerative** (Cervical and Lumbar)
2. **Deformity** (Adult and Pediatric)
3. **Trauma** (Cervical, Thoracolumbar, and Sacral)
4. **MISS Instrumentation and Vertebroplasty**
5. **MISS Microscopic Decompression**

Furthermore, you can customize your own afternoon Davos Courses experience by joining:

- A range of seminars and lectures
- Industry workshops
- “The Good-The Bad-The Ugly—A Case that Taught Me a Lesson” discussion

The AOSpine Davos Courses 2017 are targeted for participants working at the Advanced and Master’s Level, with surgical experience from 3–15 years.



Find more information on our website, and register from May 2017 onwards.

www.aodavoscourses.org

MiCo Milano Congressi Floor Plan

North Wing Entrance, Via Gattamelata, NR5, Gate 14/15



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Traumatologia

		Room: Yellow 2	Room: Yellow 1	Room: Yellow 3
10:30-13:30				
13:30-18:00	Participant registration	<p>Precourse I Knowledge Forum Tumor</p>  <p>Evidence based approach to spinal tumor cases</p>	<p>Precourse II Knowledge Forum Deformity</p>  <p>Complications in surgery for spinal deformity in the child and the adult</p>	<p>Precourse III Knowledge Forum Trauma and Spinal Cord Injury</p>  <p>Spinal trauma and SCI: advancements and controversies</p>

KEY



Paper sessions



AOSpine Members-only sessions

These sessions are for members only.

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Breaks and industry lunch symposia



Symposia



Precourse (pre-registration required)

Program at a Glance

Thursday, May 4, 2017

AOSPINE
MEMBERS-ONLY
SESSIONS











	Room: Red	Room: Blue 2	Room: Yellow 1	Room: Yellow 3	Room: Yellow 2	Room: Blue 1
07:30-08:00						Member Assembly
08:00-09:00	AOSPINE Opening symposium 2020 Vision: new horizons in AOSpine education					
09:00-09:15	Congress opening					
09:15-10:00	ADOLESCENT SCOLIOSIS 1	CERVICAL LAMINOPLASTY	LUMBAR ADJACENT SEGMENT PATHOLOGY	MINIMALLY INVASIVE SPINE SURGERY LUMBAR	8 in 8: 8 Pearls of Practice From my Region	
10:00-10:30	Break					
10:30-11:15	ADULT DEFORMITY 1	NAVIGATION	LUMBAR DISC HERNIATION	BASIC SCIENCE GROWTH FACTORS	AOSpine Research and how to get involved	
11:15-12:00	TUMOR 1	TRAUMA CERVICAL 1	NOVEL TECHNOLOGIES AND DIAGNOSTICS	SURGICAL OUTCOMES		
12:00-13:30	Industry lunch symposium	Industry lunch symposium	Industry lunch symposium			
13:30-14:30	Sagittal Alignment and Indirect Decompression: is it possible? Symposium hosted by: AOSpine past chairs 	Cervical Deformity: Evaluation and Management Symposium hosted by: 	Globalization research network: from bench to beyond regions Symposium hosted by: 	Wound and Soft Tissue management in spine Symposium hosted by: 		
14:30-15:00	LUMBAR SPONDYLOLISTHESIS	NOVEL TECHNOLOGIES AND SACRAL JOINT FUSION	ENDOSCOPIC AND MINIMALLY INVASIVE SPINE SURGERY	BASIC SCIENCE SPINAL CORD INJURY		
15:00-15:30	Break					
15:30-16:15	LUMBAR SURGERY COMPLICATIONS	TRAUMA LUMBAR	NOVEL CONCEPTS	BASIC SCIENCE DISC REGENERATION	How to write and review a paper 	
16:15-17:00	SPINE INFECTIONS 1	MINIMALLY INVASIVE SPINE SURGERY 1	NOVEL TECHNOLOGIES 1	OSTEOPOROTIC FRACTURES		
17:00-18:00	The next steps—thinking globally Symposium hosted by: 	What distinguishes a single discipline versus a multidisciplinary approach to spinal deformity surgery Symposium hosted by: 	Nuances of minimally invasive surgery (MIS): lumbar degeneration and deformity Symposium hosted by: 	Complications in cervical spine surgery: causes, management techniques, and prevention Symposium hosted by: 		
18:00-19:30	Welcome reception and official exhibition opening					

Program at a Glance

Friday, May 5, 2017

AOSPINE
MEMBERS-ONLY
SESSIONS



	Room: Red	Room: Blue 2	Room: Yellow 1	Room: Yellow 3	Room: Yellow 2	Room: Blue 1
07:00-08:00						Member Representative Election
08:00-09:00	Sacroiliac Joint Fusion: Surgical Controversies	Incremental correction techniques in pediatric spinal deformity Symposium hosted by: AOTK	Surgeon to Surgeon Scientist	Early onset scoliosis management in countries with limited resources		
09:00-10:00	ADOLESCENT SCOLIOSIS 2	CERVICAL MYELOPATHY	LUMBAR SURGERY 1	SPINE INFECTIONS 2	Global teachers—how to teach in different cultures	
10:00-10:30	Break					
10:30-11:30	DEFORMITY	CERVICAL SURGERY	SPINE TRAUMA	NON OPERATIVE MEDICAL TREATMENTS	AOSpine Past Fellows Research Session	
11:30-12:30	ADOLESCENT SCOLIOSIS 3	CERVICAL MYELOPATHY IMAGING	THORACOLUMBAR TRAUMA	SPINE BIOLOGICS	Past Chairpersons of AOSpine: Encouraging Leaders	
12:30-14:00		Industry lunch symposium		Industry lunch symposium		
14:00-15:00	Sagittal imbalance: when and why to stop correction? Symposium hosted by:  	Updates on graft and biomaterials in lumbar spine surgery Symposium hosted by: Knowledge Forum Degenerative/ Biologics 	Neurotrauma in the developing world: every little bit helps Symposium hosted by: 	Mismatches between imaging and clinical findings		
15:00-15:30	MINIMALLY INVASIVE SPINE SURGERY LATERAL LUMBAR FUSION	SURGICAL COMPLICATIONS	TUMOR 2	BIOMECHANICS		
15:30-16:00	Break					
16:00-16:45	ADULT DEFORMITY 2	CERVICAL SURGERY COMPLICATIONS	LUMBAR SURGERY 2	TRAUMA CERVICAL 2	Prevention and patient-led care in the New Health Economy	
16:45-17:45	New technologies Symposium hosted by: 	Treatment standards in spine surgery—the German perspective Symposium hosted by: 	Infections in spine surgery Symposium hosted by: 	Management of odontoid fractures Symposium hosted by: 		
18:00-19:00	Cadaver Lab Industry sponsored symposium					

Program at a glance

Saturday, May 6, 2017

AOSPINE
MEMBERS-ONLY
SESSIONS



	Room: Red	Room: Blue 2	Room: Yellow 1	Room: Yellow 3	Room: Yellow 2
08:00-09:00	<p>Postoperative Problems in Spine Surgery patients</p>	<p>Craniovertebral junction pathologies</p> <p>Symposium hosted by:</p>	<p>Spinal infections</p> <p>Symposium hosted by:</p>	<p>A pain in the neck—surgical advances in canine cervical diseases</p> <p>Symposium hosted by:</p>	
09:00-10:00	DEFORMITY CERVICAL	MINIMALLY INVASIVE SPINE SURGERY 2	LUMBAR STENOSIS	SURGICAL COMPLICATIONS DEFORMITY	AOSpine Subaxial Classification System—Training and testing
10:00-10:30	Break				
10:30-11:30	ARTHROPLASTY CERVICAL	ADULT DEFORMITY 3	TUMOR 3	NOVEL TECHNOLOGIES 2	AOSpine Sacral Classification System—Training and testing
11:30-12:30		<p>What's the Place of Lateral Approach In a Spine Surgeon's Toolbox?</p> <p>Symposium supported by:</p> <p>Society of Lateral Access Surgery</p>	<p>Latest AOSpine clinical practice guidelines: degenerative cervical myelopathy and traumatic spinal cord injury</p> <p>Symposium hosted by:</p> <p>Knowledge Forum Spinal Cord Injury</p>	<p>Improving surgical quality in spinal deformity</p> <p>Symposium hosted by:</p>	
	<p>Awards and closing ceremony Global Spine Congress 2018 announcement</p>				
12:30 - 13:30	<p>Closing symposium Minimally invasive intervertebral support strategies in the lumbar spine</p>				

AOSpine Members-Only Sessions



AOSpine offers its members a wide range of privileges, including exclusive access to members-only sessions at the Global Spine Congress

8 in 8: 8 Pearls of Practice from My Region

Moderator: Klaus Schnake

Speakers: Lali Sekhon, Jaime Segura, Zdenek Klezl, Yong Hai, Youssry El Hawary

Thursday, May 4, 09:15–10:00

Come and learn about the pearls of running an effective practice, best strategies to improve patient satisfaction, efficiency in the office and OR from the Community Development leaders of the various AOSpine regions.

AOSpine Research and How to Get Involved

Moderators: S Rajasekaran, Bryan Ashman

Speakers: S. Rajasekaran, Asdrubal Falavigna, Mike Grevitt

Thursday, May 4, 10:30–12:00

Session run by AOSpine Key opinion leaders about AOSpine Research 'The Way forward', Clinical Research for AOSpine Members, Bench to Bed-side Research, Globalization of Research in AOSpine and Integrating Research and Education in AOSpine.

How to Write and Review a Paper

Speakers: Jeff Wang, Jens Chapman, Karsten Wiechert

Thursday, May 4, 15:30–17:00

Global Spine Journal Editors-in-Chief discuss tips and techniques on how to write, research, and review scientific papers.

Global Teachers—How to Teach in Different Cultures

Moderator: Bryan Ashman

Speakers: Mohammad El Sharkawi, Chung Chek Wong, Emre Acaroglu, Juan Emmerich

Friday, May 5, 09:00–10:00

Join us for a special faculty development session looking specifically at teaching and cultural boundaries.

AOSpine Past Fellows Research Session

Moderator: Emre Acaroglu

Speakers: Past Fellows

Friday, May 5, 10:30–11:30

Networking session providing a platform for researchers to share their current projects and proposals, encouraging further development and collaboration.

Past Chairpersons of AOSpine: Encouraging Leaders

Moderators: Luiz Vialle, Jeffrey Wang

Speakers: John Webb, Max Aebi, Luiz Vialle, Jeffrey Wang

Friday, May 5, 11:30–12:30

Learn from the leaders of the AOSpine organization! Join this session run by Past Chairpersons of AOSpine, discussing how to become a leader, what the benefits of mentorship are, how to progress through an organization such as AOSpine and much more!

Prevention and Patient-Led Care in the New Health Economy

Speaker: Dominik Hotz

Friday, May 5, 16:00–16:45

How can we enable a world in which prevention is at forefront of care, where patients are empowered to 'own their health', and where treatment pathways are customized to individual needs. A new strategic approach is required.

AOSpine Subaxial Classification System—Training and Testing

Speakers: Cumhur Oner, Greg Schroeder

Saturday, May 6, 09:00–10:00

Presentation of the Subaxial Classification System and an opportunity to review cases with feedback from the presenters.

AOSpine Sacral Classification System—Training and Testing

Speakers: Cumhur Oner, Greg Schroeder, Carlo Bellabarba

Saturday, May 6, 10:30–11:30

Running the validation of the classification, presenting several cases to the attendees, which will evaluate and vote for the classification of the presented case.

Not an AOSpine member?

Join online today or at the GSC Registration desk to be able to attend the exclusive Members-Only sessions.

AOSpine Members-Only sessions are limited to 75 people (first-come, first-served basis)



Guest Spine Societies

The congress offers symposia on Thursday, Friday, and Saturday, organized by guest spine societies from different countries. Participants can meet some of these guest societies' representatives and learn more about their local activities by visiting their booths, which are located in the exhibition area. AOSpine cordially welcomes the following guest spine societies:

Spine Society Symposia on Thursday



Symposium Hosted by North American Spine Society
The next steps—thinking globally



Symposium Hosted by Scoliosis Research Society
What distinguishes a single discipline versus a multidisciplinary approach to spinal deformity surgery



Symposium Hosted by American Association of Neurological Surgeons
Nuances of minimally invasive surgery (mis): lumbar degeneration and deformity



Symposium Hosted by Cervical Spine Research Society combined with European Section of Cervical Spine Research Society
Complications in cervical spine surgery: causes, management techniques, and prevention

Spine Society Symposia on Friday



Symposium Hosted by EUROSPINE
New technologies



Symposium Hosted by Deutsche Wirbelsäulengesellschaft
Treatment standards in spine surgery—the German perspective



Symposium Hosted by Società Italiana di Chirurgia Vertebrale—Gruppo Italiano Scoliosi
Infections in Spine Surgery



Symposium Hosted by Société Française de Chirurgie Rachidienne
Management of Odontoid Fractures



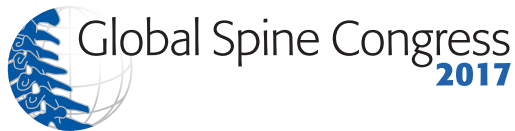
Symposium Hosted by AOSpine and European Association of Neurosurgical Societies
Sagittal imbalance: when and why to stop correction?

Spine Society Symposium on Saturday



Symposium Supported by Society of Lateral Access Surgery (SOLAS)
What's the place of lateral approach in a spine surgeon's toolbox?

Awards Ceremonies



The Global Spine Congress will culminate in an Awards Ceremony.

On **Thursday, May 4, 2017**, the following awards will be presented:



Germán Ochoa Traveling Fellowship

Germán Ochoa Traveling Fellowship: To honor Germán Ochoa's unparalleled dedication to AOSpine, the Fellowship offers a unique opportunity for a senior AOSpine faculty member to spend up to 4 weeks at a spine center of their choice.

International Educator of the Year Award

International Educator of the Year Award: The award distinguishes a long standing and highly respected member of the AOSpine Community who has demonstrated sustained and significant contribution to educational excellence.

On **Saturday, May 6, 2017**, the following awards will be presented:



Global Spine Congress 2017–Best Paper Award

The best paper will be chosen on-site by the award committee

Global Spine Congress 2017–Best E-poster Award

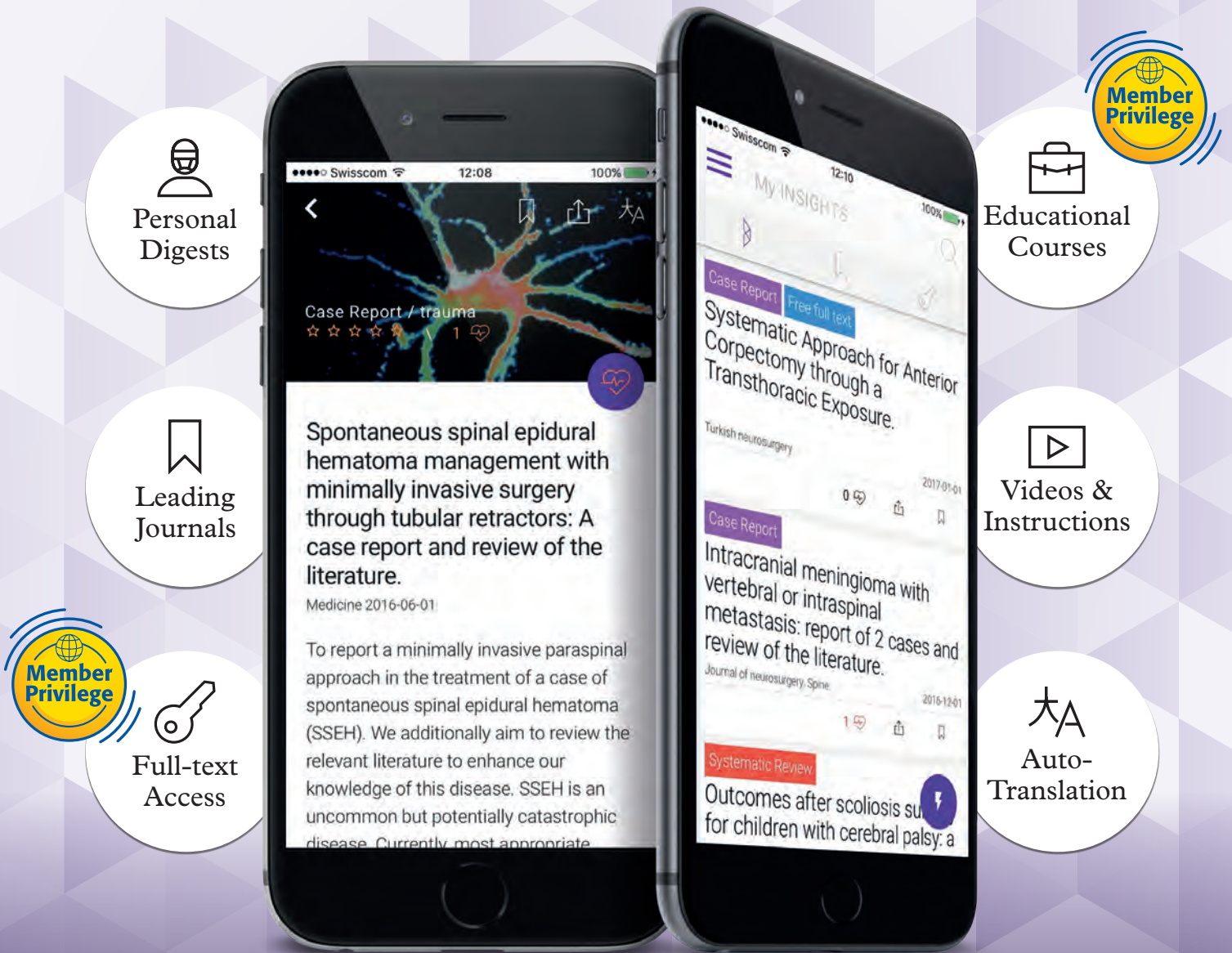
The best e-poster will be chosen on-site by the award committee

Global Spine Journal–Best Paper Award

Global Spine Journal awards the top two papers of 2016. These papers are awarded based on downloads, citations, as well as the quality of the writing and research.

Global Spine Journal–Best Reviewer Award

Global Spine Journal awards the top reviewers of 2016. The criteria are based on the amount of reviews completed during the year as well as the reviewer's average score.



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Global Spine Congress
2017

Wednesday

May 3, 2017

Wednesday

Thursday

Friday

Saturday

E-posters

Disclosures

Authors

10:30-18:00 Participant Registration

13:30-18:10	Precourse I—Knowledge Forum Tumor Spine Tumor Rounds: Evidence based approach to spinal tumor cases (Room: Yellow 2)	Moderator: Charles Fisher
	Metastatic Spine Disease	
13:30-13:40	Introduction	Charles Fisher
13:40-14:00	Lung cancer metastasis to T-spine	Áron Lazáry
14:00-14:20	Metastatic RCC to lumbar spine	Arjun Sahgal
14:20-14:40	Thyroid cancer metastasis to thoracic spine	Jorrit-Jan Verlaan
14:40-15:00	Melanoma met to TL spine	C. Rory Goodwin
15:00-15:20	Colon cancer met to thoracic spine with Bilsky grade 1c compression	Ziya Gokaslan
15:20-15:40	Metastatic breast cancer with cord compression	Ilya Laufer
15:40-16:00	Metastatic prostate cancer to cervical spine with history of prior XRT	Daniel Sciubba
16:00-16:10	Break	All
	Primary Spine Tumors	
16:10-16:30	Giant cell tumor of lumbar spine	Raphaële Charest-Morin
16:30-16:50	Recurrent chordoma of mobile spine	Tamir Ailon
16:50-17:10	Osteoid osteoma of thoracic spine	Laurence Rhines
17:10-17:30	Mobile spine chondrosarcoma of cervical spine	Nicolas Dea
17:30-17:50	Aneurysmal bone cyst of lumbar spine	Stefano Boriani
17:50-18:10	Sacral chordoma/total sacrectomy	Jeremy Reynolds

10:30-18:00 Participant Registration

13:30-18:00	Precourse II—Knowledge Forum Deformity Complications in surgery for spinal deformity in the child and the adult (Room: Yellow 1)	Moderators: See below
	Definition and Incidence of Complications in Spine Surgery	Moderator: Sigurd Berven
13:30-13:38	Defining complications/adverse events/failure to achieve surgical goals. Why is it important	Lawrence Lenke
13:38-13:46	Classifying Complications	Sigurd Berven
13:46-13:56	Quality and Value Metrics in Spine Surgery	David Polly
13:56-14:10	Questions/Discussion	Sigurd Berven
14:10-14:20	Complications in Surgery for Early Onset Scoliosis	Marco Brayda Bruno
14:20-14:30	Case Presentation EOS	Benny Dahl
14:30-14:40	Questions/Discussion	Benny Dahl
14:40-14:50	Complications in Surgery for Adolescent Scoliosis	Munish Gupta
14:50-15:00	Case Presentation AIS	André Andujar
15:00-15:10	Questions/Discussion	André Andujar
15:10-15:20	Complications in Surgery for Adult Deformity	Christopher I. Shaffrey
15:20-15:30	Case Presentation Adult Deformity	Yong Qiu
15:30-15:40	Questions/Discussion	Yong Qiu
15:40-16:00	Break (20 minutes)	All
	Impact of Complications	Moderator: Darrel Brodke
16:00-16:10	Impact on Health-related Quality of Life: Adolescent	Manabu Ito
16:10-16:20	Impact on Health-related Quality of Life: Adult	Eric Klineberg
16:20-16:30	Impact on Health Care Utilization Requirements (Length of Stay/reop/readmit)	Ferran Pellise
16:30-16:40	Impact on Cost and Value of Care	Stephen Lewis
16:40-16:55	Case Example with Discussion	Darrel Brodke
	Strategies for Avoiding Specific Complications	Moderator: David Polly
16:55-17:05	Identifying Risk Factors for Perioperative Complications—Risk Stratification	Christopher Ames
17:05-17:15	Prediction and Prevention of Mechanical Complications	Ahmet Alanay
17:15-17:25	Preoperative Optimization Strategies	Robert Hart
17:25-17:35	Strategies to Avoid Neural Injury in Deformity Surgery	Praveen V. Mummaneni
17:35-17:45	Strategies to Avoid Readmission and Reoperation	Khaled Kebaish
17:45-18:00	Questions/Discussion	David Polly

10:30-18:00 Participant Registration

13:30-18:00 Precourse III—Knowledge Forum Trauma a Spinal Cord Injury Spinal Trauma and SCI: Advancements and Controversies (Room: Yellow 3)		Moderators: Michael Fehlings Cumhur Oner Alex Vaccaro
13:30-13:45	Controversies in spinal trauma	Gregory Schroeder
13:45-14:00	Controversies in SCI	Brian Kown
14:00-14:15	Classification and injury severity in spinal trauma and SCI	Brian Kwon
14:15-14:30	The role of clinical modifiers in treatment decisions	Klaus Schnake
14:30-14:45	PLC injuries—Imaging and its importance	Sh. Rajasekaran
14:45-15:30	Discussion / cases presentation	Jens Chapman, Michael Fehlings, Cumhur Oner
15:30-16:00	Break	
16:00-16:15	Measurement of outcomes in spinal trauma and traumatic SCI	Cumhur Oner
16:15-16:30	Timing of surgery	Jefferson Wilson
16:30-16:45	Neuroprotective treatment in SCI	Michael Fehlings
16:45-17:00	Anticoagulation prophylaxis	James Harrop
17:00-17:15	Imaging	Bizhan Aarabi, Shekar Kurpad
17:15-18:00	Discussion / cases presentation	Michael Fehlings, Cumhur Oner



Global Spine Congress
2017

Thursday

May 4, 2017

Wednesday

Thursday

Friday

Saturday

E-posters

Disclosures

Authors

Thursday Program Schedule

07:30-08:00 AOSpine Members Assembly (Room: Blue 1)



07:30-07:35	Welcome and State of AOSpine	D. Riew
07:35-07:40	AOSpine Community Development	K. Schnake
07:40-07:45	AOSpine Education - including German Ochoa Award and Educator of the year award	M. Grevitt
07:45-07:50	AOSpine Research	S. Rajasekaran
07:50-07:55	Global Spine Congress	Jeffrey Wang
07:55-08:00	Q and A	All

08:00-09:00	AOSpine Opening Symposium—2020 Vision: new horizons in AOSpine education (Room: Red)	Moderator: Michael Grevitt
08:00-08:05	Introduction	Michael Grevitt
08:05-08:15	Blended learning and the 'flipped classroom'	Steven Theiss
08:15-08:25	Being the best teachers	Juan Emmerich
08:25-08:35	MIS training and simulation	Roger Härtl
08:35-08:45	Making Fellowships relevant to members needs	Emre Acaroglu
08:45-08:55	Building relationships: AOSpine Mentorship	Jeffrey Wang
08:55-09:00	Summary	Michael Grevitt


09:00-09:15 Congress Opening (Room: Red)


09:15-10:00 AOSpine Members-only session—8 in 8: 8 Pearls of Practice from My Region (Room: Yellow 2) Moderator: Klaus Schnake Speakers: Klaus Schnake, Lali Sekhon, Jaime Segura, Zdenek Klezl, Youssry El Hawary, Yong Hai



09:15-10:00 Paper Sessions			
09:15-10:00		ADOLESCENT SCOLIOSIS 1 (Room: Red)	Moderators: Mohammad El Sharkawi Norman Chutkan
09:15-09:20	A001	Radiographic Results of Selecting the Touched Vertebra as the Lowest Instrumented Vertebra in Lenke Type 1 (Main Thoracic) and Type 2 (Double Thoracic) Curves at a Minimum 5-year Follow-up	L. Lenke , P. Newton, R. Lehman, M. Kelly, D. Clements, T. Errico, R. Betz, A. Samdani, K. Blanke, Harms Study Group
09:20-09:25	A002	Shoulder balance in Lenke type 1 scoliosis treated by convex manipulation: the role of osteotomies	L. Oggiano , S. Sessa, G. La Rosa
09:25-09:30	A003	Sagittal Cervical Compensation in Adolescent Idiopathic Scoliosis	U. Guler, M. Ozalay , K. Eyvazov, A. Senkoylu, S. Beyaz, S. Pehlivan
09:30-09:35	A004	Intrathecal Morphine Reduce Blood Loss During Idiopathic Scoliosis Surgery.	N. Sekouris , K. Soultanis, L. Flouda
09:35-09:40	A005	Spinal Growth in Patients with Juvenile Idiopathic Scoliosis Treated with Boston Brace	J. Heemskerck , S. Wijdicks, R. Castelein, M. Altena, D. Kempen
09:40-09:45	A006	Verticality perception in adolescents with idiopathic scoliosis	N. Antoniadou, E. Samoladas, S. Stavridis , V. Hatzitaki
09:45-10:00		Discussion	All

09:15-10:00		CERVICAL LAMINOPLASTY (Room: Blue 2)	Moderators: Giuseppe Barbagallo Jens Chapman
09:15-09:20	A007	Correlation between posterior migration of spinal cord and cervical spine curvature after cervical laminoplasty	A. Darnis, C. Scemama, H. Pascal-Moussellard
09:20-09:25	A008	C4/5 foraminal stenosis predicts C5 palsy after expansive open-door laminoplasty	H. Lee , Jae-Sung Ahn, K. Lee
09:25-09:30	A009	A MRI Characterization of the Dorsal Cervical Cord Migration Behaviour in Laminectomy versus Hybrid Open-Door Laminoplasty	G. Liu , J. Ng, J. Tan
09:30-09:35	A010	A metaanalysis of cervical laminoplasty techniques: are mini-plates superior?	A. Humadi, T. Chao, D. Fisher , A. Barmare
09:35-09:40	A011	Comparison between radiological and clinical outcomes of laminoplasty with a titanium miniplate for cervical myelopathy	Jae-Sung Ahn, Ho-Jin Lee, K. Lee
09:40-09:45	A012	Open-door Laminoplasty for multilevel cervical spondylotic myelopathy and OPLL using titanium reconstruction miniplate and screws	K. Ahsan Md , M. Awwal, S. Khan, N. Zaman, M. Haque, Z. Zahangiri
09:45-10:00		Discussion	All

09:15-10:00		LUMBAR ADJACENT SEGMENT PATHOLOGY (Room: Yellow 1)	Moderators: Asdrubal Falavigna Karsten Wiechert
09:15-09:20	A013	Comparative analysis of risk factors for adjacent segment disease after lumbar spinal fusion—More than 10 year-follow-up	J. Soh , J. Lee, Byung-Joon Shin 
09:20-09:25	A014	Incidence of adjacent segment disease following posterior lumbar interbody fusion Vs postero-lateral fusion—A snapshot with 5 years follow up	S. Khan, F. Ashouri , K. Aneiba
09:25-09:30	A015	Paraspinal muscle, facet joint, and disc problems: risk factors for adjacent segment degeneration after lumbar fusion	S. Kuh , Dal-Sung Ryu
09:30-09:35	A016	Minimally invasive PLIF did not have advantage over conventional PLIF in the incidence of adjacent segment pathology	T. Miwa , T. Ohwada, H. Sakaura, Y. Kuroda
09:35-09:40	A017	Lumbar Fusion with topping off: A failed implant	S. Oikonomidis , J. Siewe, R. Sobottke
09:40-09:45	A018	Spino-Pelvic Malalignment In Adjacent Segment Disease Developing After Lumbar Fusion	S. Masevnin , D. Ptashnikov, D. Michailov, O. Smekalenkov, N. Zaborovskii, O. Lapaeva
09:45-10:00		Discussion	All

09:15-10:00		MINIMALLY INVASIVE SPINE SURGERY LUMBAR (Room: Yellow 3)	Moderators: Paul Thng Claudius Thomé
09:15-09:20	A019	Long term fusion rates and predictors for reoperation in patients with and without preoperative degenerative lumbar spondylolisthesis following minimally invasive decompression for lumbar spinal stenosis	N. Moayeri , Y. Rampersaud, M. Pahuta 
09:20-09:25	A020	Minimally invasive transforaminal lumbar interbody fusion with intraoperative CT-based spinal navigation: a prospective cohort of 40 cases	P. Scarone , A. Venier, K. Huscher, D. Di Stefano, S. Presilla, T. Robert, M. Reinert
09:25-09:30	A021	Clinical and radiological outcomes of InterFuse-S, a new modular PLIF, in patients with lumbar disc herniation	R. Reinas , D. Kitumba, Ó. Alves
09:30-09:35	A022	Minimally invasive transforaminal lumbar interbody fusion and instrumentation (MIS-TLIF) for the treatment of lumbar isthmic spondylolisthesis: Minimum 2-years follow-up with clinical and radiological outcomes	D. Wang
09:35-09:40	A023	Pure lateral and oblique lateral inter-body fusion for treatment of lumbar degenerative disk disease: comparison of two different techniques	M. Miscusi , S. Forcato, F. Polli, A. Ramieri, M. Cimatti, G. Costanzo, A. Raco
09:40-09:45	A024	The benefits of minimally invasive posterior lumbar interbody fusion in degenerative lumbar spondylolisthesis	M. Vorsic , G. Bunc, J. Ravnik, T. Velnar
09:45-10:00		Discussion	All

10:00-10:30 Break

10:30-12:00 AOSpine Members-only session—AOSpine Research and How to Get Involved (Room: Yellow 2) Moderators: Sh. Rajasekaran, Bryan Ashman
Speakers: Sh. Rajasekaran, Asdrubal Falavigna, Michael Grevitt, Bryan Ashman



10:30-11:15 Paper Sessions			
10:30-11:15		ADULT DEFORMITY 1 (Room: Red)	Moderators: Benny Dahl Mohammad El-Sharkawi
10:30-10:35	A025	External validation of MiSLAT algorithm and role of XLIF in management of adult degenerative deformity of spine	S. Munigangaiah , M. Ockendon, B. Balain
10:35-10:40	A026	Do different types of UIV instrument impact acute Proximal Junctional Failure (acute PJF) following adult spinal deformity surgery?; PS vs. hook	A. Matsumura , T. Namikawa, M. Kato, A. Yabu
10:40-10:45	A027	Towards Global Standardisation of Measuring Outcomes in Adult Spinal Deformity Surgery	S. Faraj , M. Van Hooff, R. Holewijn, D.W. Polly, N. Germscheid, T. Haanstra, M. De Kleuver
10:45-10:50	A028	Outcomes in primary adult deformity surgery: What happens to patients who are lost to follow-up?	D. Beckerman, S. Berven , L. Racine, T. Sharf, S. Burch, V. Deviren, B. Tay, M. Callahan, S. Hu
10:50-10:55	A029	Complication rate in adult deformity surgical treatment—safety of the posterior osteotomies	G. La Maida , A. Della Valle, M. Ferraro, F. Locatelli, B. Misaggi
10:55-11:00	A030	Adult Spinal Deformity over 70 Years of Age: A Two-Year Follow-up Study	C. Karabulut, S. Ayhan, S. Yuksel, V. Nabiye , F. Pellise, A. Vila-Casademunt, A. Alanay, F. Perez Grueso, F. Kleinstuck, I. Obeid, European Spine Study Group (ESSG)
11:00-11:15		Discussion	All

10:30-11:15		NAVIGATION (Room: Blue 2)	Moderators: Satish Rudrappa Patrick Hsieh
10:30-10:35	A031	Comparison peri-operative factors during minimally invasive pre-psoas lateral interbody fusion of the lumbar spine using either navigation or conventional fluoroscopy	Y. Zhang, I. White, E. Potts, Jean-Pierre Mobasser, D. Chou
10:35-10:40	A032	Cervical pedicle screw instrumentation—analysis of placement accuracy with O-arm based navigation	S. Chachan , H. Rahmatullah, W. Loo, S. Kumar
10:40-10:45	A033	Computer assisted robotic Surgery in the Octogenarians a case controlled study	J. Schroeder , A. Hasharoni, E. Itzhayek, L. Kaplan
10:45-10:50	A034	Surgical Outcomes of Robotic-Guidance vs. Freehand Instrumentation—A Retrospective Review of 705 Adult Degenerative Spine Patients Operated in Minimally Invasive (MIS) and Open Approaches	A. Cannestra , T. Sweeney, K. Poelstra, S. Schroerlucke
10:50-10:55	A035	Spinal intra-operative three-dimensional navigation: correlation between clinical and absolute engineering accuracy	D. Guha , R. Jakubovic, S. Gupta, N. Alotaibi, A. Kapadia, J. Klostranec, V. Yang
10:55-11:00	A036	Intraoperative computed tomography versus ISO-C 3D C-arm for navigated spinal instrumentation	N. Hecht, M. Czabanka, H. Yassin, P. Vajkoczy
11:00-11:15		Discussion	All

10:30-11:15		LUMBAR DISC HERNIATION (Room: Yellow 1)	Moderators: John Webb Yoshiharu Kawaguchi
10:30-10:35	A037	Clinical and Radiological Factors Affecting Motor Recovery Following Neurological Deficit in Lumbar Disc Herniation	V. Krishnan, S. Rajasekaran , S. Aiyer, R. Kanna, A. Shetty
10:35-10:40	A038	Treatment of Pain due to nerve root compression: irrational, ineffective and inefficient	S. Phang , J. Hobart, T. Germon
10:40-10:45	A039	Clinical and Radiological Factors Associated with Development of Motor Deficit in Lumbar Disc Prolapse: A Prospective Analysis of 70 Consecutive Cases with Neurological Deficit	V. Krishnan, S. Rajasekaran , S. Aiyer, R. Kanna, A. Shetty
10:45-10:50	A040	Management of Symptomatic Lumbar Disk Herniation: an International Perspective	P. Gadjradj , M. Arts, M. Van Tulder, W. Rietdijk, W. Peul, B. Harhangi
10:50-10:55	A041	Rare presentation of disc prolapse—Lumbar Intradural disc herniation	A. Sharma , V. Singh, V. Pai
10:55-11:00	A042	Is there a Standard of Magnification in Lumbar Discectomy? A propensity scoring study	F. Brooks , E. Aghayev, Y. Yau
11:00-11:15		Discussion	All



10:30-11:15		BASIC SCIENCE—GROWTH FACTORS (Room: Yellow 3)	Moderators: Mauro Alini Jong Beom Park
10:30-10:35	A043	Histological analysis of bone regeneration with different doses of rhBMP-2 in an ovine lumbar interbody fusion model	C. Hohaus , J. Seeger, H. Meisel, K. Siegrist
10:35-10:40	A044	A comparison of the efficacy of adipose-derived vs. bone marrow-derived stem cells in combination with a clinical-grade bone graft substitute in a rat model of spinal fusion	C. Holmes , W. Ishida, B. Elder, J. Locke, T. Witham
10:40-10:45	A045	The osteogenic effects of photo-immobilization of bone morphogenetic protein-2 using different carrier systems in a rat calvarial defect model	Kwang-Sup Song , D. Ham
10:45-10:50	A046	A comparison of syngeneic iliac crest and femoral allografts with iliac crest autograft in the rat model of spinal fusion	B. Elder, C. Holmes , W. Ishida, J. Locke, T. Witham
10:50-10:55	A047	The effects of topical intraoperative administration of vancomycin or tobramycin on fusion rates in a rat model	W. Ishida, C. Holmes, B. Elder, J. Locke, T. Witham PF
10:55-11:00	A048	Effect of Oxy133, an osteogenic oxysterol, and rhBMP2 on new bone formation in rat posterolateral fusion model	Z. Buser , S. Drapeau, F. Stappenbeck, J. Wang, Renata C. Pereira, F. Parhami
11:00-11:15		Discussion	All

11:15-12:00 Paper Sessions			
11:15-12:00		TUMOR 1 (Room: Red)	Moderators: Emre Acaroglu Alexander Disch
11:15-11:20	A049	Patterns of Failure of Fixation In Metastatic Spinal Tumour Disease	D. Sonawane , A. Singahla, A. Zaw, B. Tan, N. Kumar
11:20-11:25	A050	Symptomatic Spinal Metastasis: A systematic literature review of the preoperative predictive factors for survival, neurological, functional and quality of life outcomes in surgically treated patients	A. Nater , A. Martin, A. Saghal, D. Choi, M. Fehlings
11:25-11:30	A051	Stereotactic body radiotherapy followed by surgical stabilization for patients with unstable spinal metastases: First-in-man study according to the IDEAL recommendations	A. Versteeg , J. Van Der Velden, W. Eppinga, N. Kasperts, S. Gerlich, H. Verkooijen, E. Servalli, J. Hes, M. Van Vulpen, C. Oner, Jorrit-Jan Verlaan
11:30-11:35	A052	Selective endovascular embolization in pediatric patients with hyper-vascular mono-segmental thoracic and lumbar spine tumors	D. Malamashin, M. Komissarov, A. Mushkin
11:35-11:40	A053	Retrospective analysis of preoperative embolization of patients with primary and secondary spinal tumors	A. Dubskikh , A. Tarkhanov
11:40-11:45	A054	Surgical treatment of spinal cord intramedullary tumors in adult	N. Konovalov , I. Shevelev, I. Pronin, Y. Kushel, A. Nazarenko, A. Golanov, P. Zelenkov, R. Onoprienko, D. Asyutin, V. Korolishin, B. Zakirov, M. Martynova, S. Timonin
11:45-12:00		Discussion	All

11:15-12:00		TRAUMA CERVICAL 1 (Room: Blue 2)	Moderators: Frank Kandziora Cumhur Oner
11:15-11:20	A055	An Economic Case for the Surgical Treatment of Type-II Odontoid Fractures in the Elderly: A Markov Cost-Utility Analysis based on the Prospective AOSpine Geriatric Odontoid Fracture Study	J.R. Wilson , J. Harrop, G. Schroeder, A. Vaccaro, J. Smith, P. Arnold, M. Fehlings PF
11:20-11:25	A056	Bicortical facet screws as a new option for posterior C2 fixation: anatomical study and clinical experience.	A. Rusconi , E. Freitas-Olim, C. Barrey
11:25-11:30	A057	Halo Vest Immobilization and Surgical Fusion for Pediatric Cervical Spine Injuries	T. Purvis, R. De La Garza-Ramos, N. Abu-Bonsrah, C.R. Goodwin , Mm L. Groves, M.C. Ain, D.M. Sciubba
11:30-11:35	A058	Trends in Incidence and Treatment of Odontoid Fractures	S. Yasmeh, W. Pannell, A. D'Oro, J. Wang, Z. Buser, R. Hah
11:35-11:40	A059	Application of AOSpine subaxial cervical spine injury classification system as predictor of injury severity and neurological outcome in simple and complex cases	B. Aarabi , A. Vaccaro, G. Schroeder, C. Oner, N. Akhtar-Danesh
11:40-11:45	A060	Complex Type II odontoid fractures—our management	V.R. Tukkapuram , S. Rudrappa
11:45-12:00		Discussion	All

Thursday Program Schedule

11:15-12:00		NOVEL TECHNOLOGIES AND DIAGNOSTICS (Room: Yellow 1)	Moderators: Jaime Segura Shekar Kurpad
11:15-11:20	A061	9.4T MRI complements the Pfirrmann grade through better differentiation of the NP/ AF	I. Sher , C. Daly, T. Goldschlager, D. Oehme, R. Chandra, P. Ghosh
11:20-11:25	A062	Horizontal rod and band: A novel surgical technique for isthmic repair	G. Ristori, Maryem-Fama Ismael Aguirre , M. Damilano, C. Formica, C. Lamartina, P. Berjano
11:25-11:30	A063	Intraoperative neurophysiological monitoring in cervical myelopathy	P. Cortes Garcia , P. Perez Lorensu, B. Deniz Rodriguez
11:30-11:35	A064	Predictive accuracy of Surgimap™ Surgical planning for sagittal imbalance: a cohort study	F. Langella , C. Riccardo, A. Vesnaver, M. Ismael, M. Pejrona, J. Villafañe, C. Lamartina, P. Berjano
11:35-11:40	A065	Evaluation of techniques to determine rotational alignment of the vertebral body in minimally invasive spine surgery: A CT analysis of lumbar spine symmetry	A. Kumar , A. Su, V. Sundaram, A. Doshi, S. Qureshi
11:40-11:45	A066	Extra foraminal selective nerve root block—a novel technique for management of lumbar radiculopathy	N. Babu, Arun-Kumar Viswanadha , S. Raju, A. Priyadarsini
11:45-12:00		Discussion	All

11:15-12:00		SURGICAL OUTCOMES (Room: Yellow 3)	Moderators: Carlos Tucci Abdulaziz Al-Mutair
11:15-11:20	A067	Incidence and influence of depression and anxiety on clinical outcome before and one year after spine surgery for degenerative disc disease	E. Shiban , Y. Shiban, J. Thiel, U. Hoffmann, J. Lehmborg, B. Meyer
11:20-11:25	A068	AOSpine Needs Assessment at the Spine Surgery Department, University Hospital Basel	G. Jost , M. Cunningham, S. Schaeren 
11:25-11:30	A069	Successful Lumbar Surgery Results in Long-Term Improvement in Psychological Well-Being	C. Mancuso , R. Duculan, F. Cammisa, A. Sama, A. Hughes, D. Lebl, F. Girardi
11:30-11:35	A070	Habitual Smoking in the Young Employees, Alcohol Intake, Depressive Mood and Non-Sedentary Work Demand have Associations with LBP—A Survey of Employed Workers in a Medical Factory of Japan-	K. Okuyama
11:35-11:40	A071	The relationship between gastric esophageal reflux disease and spinal sagittal alignment in elderly patients	Y. Nakamura , S. Asano, M. Kanai, T. Fujii, K. Tajima
11:40-11:45	A072	Cross-cultural adaptation and validation of the Turkish version of the Core Outcome Measures Index for low back pain	E. Çetin , E. Çelik, E. Acaroglu, H. Berk 
11:45-12:00		Discussion	All


12:00-13:30	Industry Lunch Symposia	
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13:30-14:30		Symposium hosted by AOSpine past chairpersons—Sagittal Alignment and Indirect Decompression: is it possible? (Room: Red)	Moderators: K. Daniel Riew Jeffrey Wang
13:30-13:32		Introduction	K. Daniel Riew
13:32-13:44		Sagittal Alignment and Indirect Decompression: is it possible? With MISS	Max Aebi
13:44-13:56		Sagittal Alignment and Indirect Decompression: is it possible? With ALIF	Max Aebi
13:56-14:08		Sagittal Alignment and Indirect Decompression: is it possible? With TLIF	Luiz Vialle
14:08-14:20		Sagittal Alignment and Indirect Decompression: is it possible? With LLIF	Jeffrey Wang
14:20-14:30		Discussion	All

13:30-14:30	Symposium—Cervical Deformity: Evaluation and Management (Room: Blue 2)	Moderators: Justin Smith Christopher Ames
13:30-13:42	Clinical and Radiographic Assessment of Cervical Deformity	Philippe Bancel
13:42-13:54	Surgical Planning and Techniques for the Treatment of Cervical Deformity	K. Daniel Riew
13:54-14:00	Discussion/questions	Philippe Bancel / K. Daniel Riew
14:00-14:12	When Cervical Deformity Needs an Osteotomy Elsewhere First	Christopher Shaffrey
14:12-14:24	Complications and Management in Cervical Deformity Surgery	Heiko Koller
14:24-14:30	Discussion/questions	Christopher Shaffrey / Heiko Koller


13:30-14:30	Symposium hosted by AOSpine Latin America—Globalization Research Network: From bench to beyond regions (Room: Yellow 1)	Moderator: Juan Emmerich
13:30-13:40	Introduction	Jeffrey Wang
13:40-13:55	Building a Research	Jose Maria Jiménez
13:55-14:10	Barriers and solutions of PRO Registries	Asdrubal Falavigna
14:10-14:25	The experience of running a research project	Emiliano Vialle
14:25-14:30	Discussion	All

13:30-14:30	Symposium hosted by AOSpine and AO Foundation—Wound and Soft Tissue Management in Spine (Yellow 3)	Moderator: Luiz Vialle
13:30-13:35	Welcome and Introduction	Luiz Vialle
13:35-13:45	Soft Tissue Management: modern concepts	Daniel Gelb
13:45-13:55	Spine Surgery Bleeding: management options	Emiliano Vialle
13:55-14:05	Wound Infection: prevention and management	Michael Grevitt
14:05-14:15	MISS and Bleeding: how to control?	Nestor Taboada
14:15-14:25	Discussion	All
14:25-14:30	Closing	Luiz Vialle

14:30-15:00 Paper Sessions			
14:30-15:00		LUMBAR SPONDYLOLISTHESIS (Room: Red)	Moderators: Frank Kandziora Yu Liang
14:30-14:35	A073	Decompression Versus Fusion for Grade I Degenerative Spondylolisthesis: A Meta-Analysis	J. Juaregui, S. Koenig, M. Shasti, L. Brown, Steven C. Ludwig, D. Gelb , K. Banagan, E. Koh
14:35-14:40	A074	Re-admission, Re-operation, and Patient Reported Outcomes after Lumbar Fusion Surgery for Spondylolisthesis in 480 Patients from the QOD Registry	E. Bisson , M. Bydon, S. Glassman, K. Foley, J. Slotkin, E. Potts, M. Shaffrey, D. Coric, J. Knightly, P. Park, A. Asher, Kai-Ming Fu, M. Virk, A. Chan, P. Mummaneni
14:40-14:45	A075	The Effect Of Surgical Wait Time On Patients With Degenerative Lumbar Spondylolisthesis: A Canadian Spine Outcomes and Research Network (CSORN) Study	J. Tee, N. Dea , R. Rampersaud, N. Manson, H. Hall, K. Thomas, G. McIntosh, C. Fisher 
14:45-14:50	A076	Surgical outcome of pedicle screw-lamina hook plus isthmic bone grafting through Wiltse approach for lumbar spondylolysis in children and adolescent an over 5 years follow-up	X. Hu , Z. Yang, Z. Wang, Z. Luo
14:50-15:00		Discussion	All

14:30-15:00		NOVEL TECHNOLOGIES AND SACRAL JOINT FUSION (Room: Blue 2)	Moderators: Theodore Choma Alaa Eldin Ahmad
14:30-14:35	A077	Twelve-month outcomes from a multicenter randomized controlled trial of minimally invasive sacroiliac joint fusion with triangular titanium implants vs conservative management	P. Gaetani , B. Sturesson, C. Zoia, R. Pflugmacher, D. Bongetta, J. Dengler, M. Minelli, D. Prestamburgo, A. Gasbarrini, D. Kools
14:35-14:40	A078	Is Kambin's triangle safe for Lumbar Interbody Fusion? Minimally Invasive Extraforaminal Lumbar Interbody Fusion (ELIF)	Hyeun-Sung Kim
14:40-14:45	A079	A patient-specific image-based computational model for biomechanical evaluation and design of 3D printed polycarbonate fusion cages	E. Provaggi , C. Capelli, J. Leong, R. Goodchild, W. Austin, D. Kalaskar
14:45-14:50	A080	Minimally Invasive Sacroiliac Joint Fusion Using Triangular Titanium Implants: Pooled Analysis of 3 Prospective Clinical Trials	J. Dengler , B. Duhon, P. Whang, C. Frank, J. Glaser, B. Sturesson, S. Garfin, D. Cher, A. Rendahl, D.W. Polly
14:50-15:00		Discussion	All

14:30-15:00		ENDOSCOPIC AND MINIMALLY INVASIVE SPINE SURGERY (Room: Yellow 1)	Moderators: Asdrubal Falavigna Lorin Benneker
14:30-14:35	A081	The Safety Profile of Percutaneous Minimally Invasive Sacroiliac Joint Fusion: A Systematic Review and Meta-Analysis	A. Shamrock , A. Patel, M. Al Maaieh
14:35-14:40	A082	Does the addition of either a lateral or posterior interbody device to posterior instrumented lumbar fusion decrease cost over a 6 year period?	P. Schadler, P. Derman, J. Shue, L. Lee, H. Do, S. Koutsoumbelis, A.A. Sama, F.P. Girardi, F.P. Cammisa, A. Hughes
14:40-14:45	A083	Contralateral keyhole endoscopic surgery (CKES) for lumbar spinal stenosis and lumbar disc herniation: technical note and preliminary results	C. Park , J. Hwang
14:45-14:50	A084	Radiological status of paravertebral muscles after Bi-portal Arthroscopic Spinal Surgery (BASS)	H. Lee , Jae-Sung Ahn, K. Lee
14:50-15:00		Discussion	All

14:30-15:00		BASIC SCIENCE—SPINAL CORD INJURY (Room: Yellow 3)	Moderators: Zorica Buser Hans Jörg Meisel
14:30-14:35	A085	Deleterious Effect of Methylprednisolone on Spinal Cord After Acute Traumatic Injury: Down-regulation of Aquaporin-4 Expression and Persistence of Blood-Spinal Cord Barrier Disruption.	E. Cabrera-Aldana , F. Ruelas-Pérez, C. Aranda-Fraustro, A. Martínez-Cruz, R. Rincón-Heredía, A. Reyes-Sánchez, G. Guizar-Sahagún, L. B. Tovar-y-Romo 
14:35-14:40	A086	Biomechanical Evaluation of Fusion and Non-Fusion Spinal Instrumentation used in Scoliotic Patients	M. Foltz, A. Freeman, A. Ellingson, J. Bechtold, V. Barocas, D.W. Polly
14:40-14:45	A087	Spatial and temporal response of myelinating cells to traumatic spinal cord injury in animal studies—a systematic review	A. Shakouri-Motlagh, M. Mokhtab, Z. Hassannejad , V. Rahimi-Movaghar
14:45-14:50	A088	Efficacy of hydrogels for repair of traumatic spinal cord injuries: a systematic review and meta analysis	Z. Hassannejad , V. Rahimi-Movaghar
14:50-15:00		Discussion	All

15:00-15:30		Break	
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15:30-17:00 AOSpine Members-only session—How to Write and Review a Paper (Global Spine Journal) (Room: Yellow 2)
Speakers: Jeffrey Wang, Jens Chapman, Karsten Wiechert



15:30-16:15 Paper Sessions

15:30-16:15		LUMBAR SURGERY COMPLICATIONS (Room: Red)	Moderators: Alex Vaccaro Claudio Lamartina
15:30-15:35	A089	Economic Impact and Clinical Outcomes of Liberal Blood Transfusion in Spine Surgery	T. Purvis, C.R. Goodwin , R. De La Garza-Ramos, A. Karim Ahmed, V. Lafage, Brian J. Neuman, P.G. Passias, K.M. Kebaish, S.M. Frank, D.M. Sciubba
15:35-15:40	A090	Obstructive Sleep Apnea is Associated with Increased Complication Rates in Elective Spine Surgery	A. Chung , R. Digiovanni, N. Olmscheid, J. Hustedt, R. Waldrop, N. Chutkan
15:40-15:45	A091	Rates of aspiration pneumonia and various dysphagia stages after cervical fusion procedure	K. Jacobsen, L. Lee , Z. Buser, K. Barkoh, J. Lucas, C. Wang, F. Acosta, J. Liu, J. Wang
15:45-15:50	A092	Predictors of Blood Transfusion in Posterior Lumbar Spinal Fusion: A Canadian Spine Outcome and Research Network (CSORN) study	M. Morcos , F. Jian, G. McIntosh, M. Weber
15:50-15:55	A093	After-Hours' Emergent Spine Surgery—Perhaps we should think twice?	R. Charest-Morin , A. M. Flexman, M. Bond, T. Ailon, N. Dea, C. Fisher, D. Marcel, M. Boyd, S. Paquette, B. Kwon, J. Street
15:55-16:00	A094	Post-Operative Venous Thromboembolic Events in patients undergoing Lumbar Spine Surgery	A. Nazareth, R. Hah , A. D'Oro, A. Jakoi, K. Schoell, P. Heindel, J. Wang, Z. Buser
16:00-16:15		Discussion	All

Thursday

15:30-16:15		TRAUMA—LUMBAR (Room: Blue 2)	Moderators: Max Aebi Bryan Ashman
15:30-15:35	A095	Is the transpedicular bone grafting an effective technique for prevention of kyphosis in thoracolumbar fractures?	C.D. Ríos, M. Cahueque, G. Moreno, A. Aceves, L. Gutierrez, M. Bregni
15:35-15:40	A096	Postoperative evaluation of vertebral body height correction in Magerl A thoracolumbar fractures	N. Barut , R. Bonaccorsi, Q. Monzani, H. Quentin
15:40-15:45	A097	Impact of fragments displacement on surgical treatment of thoracolumbar fractures: a retrospective radiological analysis	G. Lofrese , F. De Iure, S. Battisti, M. Cappuccio
15:45-15:50	A098	Could intermediate screw in thoracolumbar fracture fixation save motion levels? Comparative study between long segment and short segment with intermediate screw fixation.	T. Elhewala , A. El-Adawy, M. Hussein
15:50-15:55	A099	Influence of insurance status on the outcome and length of work incapacity in patients with surgically treated fractures of the thoraco-lumbar junction	M. Schroedel , H. Hertlein
15:55-16:00	A100	Short-Segment Fixation in Type C AO Thoracolumbar Fractures with Neurological Deficit: Survival Time of Paraplegic Patients Under Workers' Compensation	J. Zamorano , J. Lecaros, J. Cirillo, V. Ballesteros, J. Fleiderman, A. Urzúa
16:00-16:15		Discussion	All

Thursday Program Schedule

15:30-16:15		NOVEL CONCEPTS (Room: Yellow 1)	Moderators: Carlos Tucci Joseph Cheng
15:30-15:35	A101	Spine sagittal balance characterization in professional soccer players	B. Direito Santos , O. Carvalho, E. Ribeiro, P. Varanda, R. M. Duarte, M. Vieira Da Silva
15:35-15:40	A102	Biological disc replacement combined with a bio-resorbable stabilization system—A proof of concept study	G. Lang , J. Mojica Santiago, R. Navarro-Ramirez, I. Hussain, L. Bonassar, R. Hartl
15:40-15:45	A103	A Correlation analysis of radiographic Spinopelvic Parameters in Health and Disease	S. MLV , D. Sharma, J. Menon
15:45-15:50	A104	Intraoperative Stress in Spine Surgery: Attending versus Resident	M. Reinhold , J. Kremer PF
15:50-15:55	A105	Factors that Impact Pedicle Screws Stability in Patients with Degenerative Diseases of Lumbar Spine	A. Bokov , S. Mlyavykh, A. Aleynik, M. Kutlaeva
15:55-16:00	A106	Unilateral Spinous Process Non-Covering Hook Type Patient-Specific Drill Template for Thoracic Pedicle Screw Fixation: A Pilot Clinical Trial and Template Classification	Y. Won , S. Kim
16:00-16:15		Discussion	All

15:30-16:15		BASIC SCIENCE—DISC REGENERATION (Room: Yellow 3)	Moderators: Mauro Alini Shekar Kurpad
15:30-15:35	A107	Diffusion characteristics of human annulus fibrosus—a study documenting the dependence of annulus fibrosus on endplate for diffusion	N. Babu , Arun-Kumar Viswanadha, S. Raju
15:35-15:40	A108	Comparison of the stemness potential and response to inflammation of human intervertebral disc cells, adipose- and bone marrow-derived stem cells	A. Colombini , P. De Luca, M. Viganò, C. Perucca Orfei, R. Cecchinato, L. De Girolamo
15:40-15:45	A109	Radiological, Histological, Morphological and Biochemical Comparison of two Ovine Lumbar Intervertebral Disc Injury Models	C. Daly , P. Ghosh, T. Badal, R. Shimmon, I. Ghosh, G. Jenkin, D. Oehme, J. Cooper-White, T. Naidoo, I. Sher, K. Jain, T. Goldschlager
15:45-15:50	A110	Parvovirus B19 infection in intervertebral disc	A. Reinke , M. Sailer, M. Behr, B. Meyer, J. Lehmborg
15:50-15:55	A111	Characterisation of the annulus fibrosus mechanical behaviour requires a specimen-specific approach	O. Kayode, Sebastien N.F. Sikora, Ruth K. Wilcox, M. Mengoni
15:55-16:00	A112	The utilization of pressure mapping sensors to measure intradiscal pressure distribution and implant footprints—abilities and pitfalls	O. Riesenbeck , M. Schulze, D. Gehweiler, Michael J. Raschke, R. Hartensuer
16:00-16:15		Discussion	All

16:15-17:00 Paper Sessions

16:15-17:00		SPINE INFECTIONS 1 (Room: Red)	Moderators: Amer Aziz James Harrop
16:15-16:20	A113	Improvement in Frankel Scale in caries spine patients with Frankel Scale "A" undergone anterior decompression and cage with autologous bone graft after a 5 years follow up	A. Dogar , H. Hussain, A. Ahmad, A. Aziz, S. Javed, N. Ahmed, R. Akram
16:20-16:25	A114	The In Vitro and In Vivo effects of Vancomycin on Osteogenesis in Lumbar Spine Surgery	B. Lawrence , S. Maitra, R. Spiker, N. Spina, D.S. Brodke PF
16:25-16:30	A115	Hematogenous Spondylitis caused by Methicillin-resistant Staphylococcus Aureus. Incidence, risk factors, management and outcomes	H. Abdelrahman, H. Gendy , M. Shousha, H. Boehm
16:30-16:35	A116	Perioperative Invasive Vascular Catheterization Associated with Increased Risk of Postoperative Infection in Lumbar Spine Surgery: an analysis of 65,158 patient records	P. Heindel, J. Lucas , A. D'Oro, N. Patel, K. Schoell, Z. Buser, J. Wang PF
16:35-16:40	A117	One stage surgical treatment of infected lumbar total disc arthroplasty with cutaneous abdominal fistulas—report of 3 cases	C. H. Hoffmann , F. Kandziora
16:40-16:45	A118	Wound infection after a spinal surgery has got a negative influence on the patients' subjective long term treatment outcome	A. Lazáry , I. Klemencsics, P. Varga
16:45-17:00		Discussion	All

Thursday Program Schedule

16:15-17:00		MINIMALLY INVASIVE SPINE SURGERY 1 (Room: Blue 2)	Moderators: Abdulrazzaq Alobaid Roger Härtl
16:15-16:20	A119	Minimally invasive resection of ventral and ventrolateral intradural extramedullary spinal lesions. Clinical outcomes and the addition of image merge technique.	R. Maduri , A. Belouauer, L. Bobinski, J. Duff
16:20-16:25	A120	Old dogs, new tricks: what motivates experienced spine surgeons to try minimally invasive surgery?	B. Ashman
16:25-16:30	A121	A single-incision, oblique retroperitoneal approach for lumbar interbody fusion from L1 to S1 in adult spinal deformity	Eun-Min Seo
16:30-16:35	A122	Treatment of the fractional curve of adult scoliosis with circumferential minimally invasive surgery (cMIS) versus traditional, open surgery: an analysis of surgical outcomes	D. Chou , P. Mummaneni, P. Nunley, J. Zavatsky, R. Eastlack, D. Okonkwo, M. Wang, P. Park, J. Uribe, N. Anand, V. Deviren, B. Akbarnia, S. Nguyen, G. Mundis Jr.
16:35-16:40	A123	Learning Curve for MISS Aspirants: A Retrospective Review from five years of Minimal Invasive Spine Surgeries	H. Modi, S.A. Goel , Y. Desai
16:40-16:45	A124	Efficiency of MIST (Minimally invasive spine stabilization) for the patient of metastatic spinal tumor	T. Hasegawa, K. Nakanishi
16:45-17:00		Discussion	All

16:15-17:00		NOVEL TECHNOLOGIES 1 (Room: Yellow 1)	Moderators: Lali Sekhon Ghassan Skaf
16:15-16:20	A125	Detethering of the C2 nerve root and avoidance of transection and injury during C1 screw placement: A cadaveric feasibility study	C. Fisahn , J. Johal, M. Moisi, J. Iwanaga, R.J. Oskouian, J.R. Chapman, R.S.Tubbs
16:20-16:25	A126	Development of a new assessment tool for cervical myelopathy using a virtual reality hand tracking sensor	M.A. Alagha , M. Alagha, E. Dunstan, O. Sperwer, K. Timmins, B. Boszczyk
16:25-16:30	A127	A proinflammatory and degenerative intervertebral disc organ culture model to investigate novel anti-inflammatory treatment approaches for degenerative disc disease	G. Lang , Y. Liu, Z. Zhou, D. Kubosch, N. Suedkamp, M. Alini, S. Grad, Z. Li
16:30-16:35	A128	Comparative analysis of inflammatory processes during cervical and lumbar degenerative disc disease	E. Touli, K. Wuertz-Kozak, H. Greutert, S. Ferguson, O. Hausmann
16:35-16:40	A129	Dysphagia in Standalone versus Conventional Anterior Cervical Discectomy	C. Fisahn , B. Burgess, F. Alonso, Daniel C. Norvell, R. Shane Tubbs, Rod J. Oskouian, J.R. Chapman
16:40-16:45	A130	Driving reaction time after spinal surgery: A systematic review	A. Alhammoud , K. Alkhalili, A. Baco
16:45-17:00		Discussion	All

16:15-17:00		OSTEOPOROTIC FRACTURES (Room: Yellow 3)	Moderators: Abdulaziz Al-Mutair Klaus Schnake
16:15-16:20	A131	Bone Quality of Lumbar Spine Assessment Using Dual Emission X-ray Absorptiometry—a Potentially Misleading Results	A. Bokov , S. Mlyavykh, M. Rasteryaeva, T. Malysheva
16:20-16:25	A132	Vertebral fracture over the metal structure in patients with osteoporosis. Can we prevent these injuries?	I. Basankin , V. Porhanov, A. Zavrzhnov, K. Tahmazyan, A. Afaunov, D. Ptashnikov, S. Malahov, V. Shapovalov
16:25-16:30	A133	Comparison of Unipedicular versus Bipedicular balloon Kyphoplasty for Osteoporotic Vertebral Compression Fractures	H. Cho , J. Kim
16:30-16:35	A134	Percutaneous Vertebral Body Stenting and Bone Cement Augmentation Reduces Morbidity in Osteoporotic Spine Fractures	H. Tan, K.S Oh
16:35-16:40	A135	Conservative Management of Osteoporotic Vertebral Fractures	H. Cho, J. Kim
16:40-16:45	A136	Cement Leakage after Vertebroplasty; Correlation with Patterns of Compression Fractures and Bone Mineral Density	J. Kim , Hong-Man Cho
16:45-17:00		Discussion	All

17:00-18:00 Spine Societies (Room: Red)

17:00-18:00	Symposium Hosted by North American Spine Society— The Next Steps—Thinking Globally	Moderator: Joseph Cheng
17:00-17:05	Introduction	Jeffrey Wang
17:05-17:15	Disruptive Technology in Spine	Norman Chutkan
17:15-17:25	Worldwide standardization of spinal care: possible, feasible?	Joseph Cheng
17:25-17:35	Responsibility of spine organizations: how are we doing?	Jeffrey Wang
17:35-17:45	Spine Care in Asia: 20 years ago, Today, and 20 years from Now	Yong Hai
17:45-18:00	Discussion	All

17:00-18:00 Spine Societies (Room: Blue 2)

17:00-18:00	Symposium Hosted by Scoliosis Research Society World Wide Course—What Distinguishes a Single Discipline versus a Multidisciplinary Approach to Spinal Deformity Surgery	Moderators: Marinus De Kleuver Sigurd Berven Marco Brayda-Bruno
17:00-17:10	Risk stratification	Benny Dahl
17:10-17:17	Case Presentation of a Complication with a Neurological Deficit	Sigurd Berven
17:17-17:25	How to handle neuromonitoring alers, incl the use of a Neuromonitoring checklist	Praveen V. Mummaneni
17:25-17:32	Case Presentation needing a plastic surgery approach and closure	Marco Brayda-Bruno
17:32-17:40	Plastic surgery recommendations for complex pediatric spinal approaches and closures	Franz Baruffaldi Preis
17:40-18:00	Summing up: checklist to identify indication for dual discipline approach	Marinus De Kleuver/ Sigurd Berven

17:00-18:00 Spine Societies (Room: Yellow 1)

17:00-18:00	Symposium Hosted by American Association of Neurological Surgeons—Nuances of Minimally Invasive Surgery (MIS): Lumbar Degeneration and Deformity	Moderator: Christopher I. Shaffrey
17:00-17:12	Update on Decompressive Techniques	John Joseph Knightly
17:12-17:25	Anterior Column Reconstruction (Lateral and ALIF) and Spinal Alignment	Regis W. Haid
17:25-17:38	Open and MIS... How to select using the MISDEF algorithm	Christopher I. Shaffrey
17:38-17:51	MIS Posterior Approaches for Alignment and Fusion (TLIF, percutaneous fixation)	Praveen V. Mummaneni
17:51-18:00	Discussion / Q and A	All

17:00-18:30 Spine Societies (Room: Yellow 3)

17:00-18:30	Symposium Hosted by Cervical Spine Research Society and CSRS-EU—Complications in Cervical Spine Surgery: Causes, Management Techniques, and Prevention	Moderator: Darrel Brodke
17:00-17:03	Introduction	Darrel Brodke
17:03-17:17	Dysphagia/Dysphonia	Heiko Koller
17:17-17:31	C5 Palsy after C-Spine Surgery	Yohan Robinson
17:31-17:45	CSF Leak in Cervical Surgery	Ronald Bartels
17:45-17:59	Vertebral Artery Injury	K. Daniel Riew
17:59-18:13	Spinal Cord Injury During Surgery	Michael Fehlings
18:13-18:27	Neck Pain after Stand Alone Cage	Ronald Bartels
18:27-18:30	Final Thoughts	Darrel Brodke

18:00-19:30 Welcome reception and official exhibition opening



Global Spine Congress
2017

Friday

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Wednesday

Thursday

Friday

Saturday

E-posters

Disclosures

Authors

07:00-08:00 AOSpine Member Representative Election
(Room: Blue 1)



08:00-09:00	Symposium—Sacrolliac Joint Fusion: Surgical Controversies (Room: Red)	Moderator: Jeffrey Wang
08:00-08:15	The pathogenesis and diagnosis of SI joint problems and conservative treatments	Bengt Stuesson
08:15-08:25	SI fusion is appropriate	David Polly
08:25-08:35	SI fusion is not appropriate	Theodore Choma
08:35-08:40	Debate: The surgical treatment of SI joint	All
08:40-08:50	The controversy regarding the surgical treatment of SI joint	Jeffrey Wang
08:50-09:00	Discussion	All

08:00-09:00	Symposium hosted by AOTK—Incremental Correction Techniques in Pediatric Spinal Deformity (Room: Blue 2)	Moderators: Maarten Spruit Venugopal Menon
08:00-08:03	Case presentation AIS double major curve	Philip Horsting
08:03-08:10	Technique of Correction	Philip Horsting
08:10-08:20	Discussion	All
08:20-08:23	Case presentation severe AIS curve	Michael Grevitt
08:23-08:30	Technique of Correction	Michael Grevitt
08:30-08:40	Discussion	All
08:40-08:50	EOS: concept of growth modulation and management with Trolley	Jean Ouellet
08:50-09:00	Discussion	All


08:00-09:00	Symposium hosted by AOSpine Research—Surgeon to Surgeon Scientist (Room: Yellow 1)	Moderators: Sh. Rajasekaran Asdrubal Falavigna
08:00-08:05	Introduction—Surgeon to Surgeon Scientist	Sh. Rajasekaran
08:05-08:14	Integrating research in your daily practice	Alex Vaccaro
08:14-08:23	Planning a research project	Michael Fehlings
08:23-08:32	Structuring a clinical research unit	Asdrubal Falavigna
08:32-08:41	Overcoming barriers to completing a study	James Harrop
08:41-08:50	AOSpine—your partner in research	Sh. Rajasekaran
08:50-09:00	Discussion	All

08:00-09:00	Symposium—Early onset scoliosis management in countries with limited resources (Room: Yellow 3)	Moderators: Youssry El Hawary Amer Aziz
08:00-08:05	Introduction	Youssry El Hawary, Amer Aziz
08:05-08:15	Early onset scoliosis in developing countries	Youssry El Hawary
08:15-08:25	Management of severe curves (> 100 degrees) by growth friendly technique: Nanjing experience	Yong QIU
08:25-08:35	EOS Ghurki Hospital (Lahore, Pakistan): Experience, problems, complications	Amer Aziz
08:35-08:45	How to begin the EOS service in country with limited resources	Alaa Eldin Ahmad
08:45-09:00	Discussion	All

09:00-10:00 AOSpine Members-only session—Global teachers—How to Teach in Different Cultures (Room: Yellow 2) Moderator: Bryan Ashman
Speakers: Mohammad El Sharkawi, Chung Chek Wong, Emre Acaroglu, Juan Emmerich



09:00-10:00 Paper Sessions			
09:00-10:00		ADOLESCENT SCOLIOSIS 2 (Room: Red)	Moderators: Alaa Eldin Ahmad David Polly
09:00-09:05	A137	Direct vertebral rotation vs single concave rod rotation. Low-dose intraoperative computed tomography evaluation of spine derotation in adolescent idiopathic scoliosis surgery	R. Pankowski , M. Roclawski, W. Kloc, T. Mazurek, M. Ceynowa, M. Mikulicz
09:05-09:10	A138	Prognostic factors of uninstrumented thoracic curve correction above selective fusion for Lenke 5 Idiopathic Adolescent Scoliosis	F. Solla , C. Doria, Jean-Luc Clément
09:10-09:15	A139	Optimal Selection of the Lowest Instrumented Vertebra for Lenke Type 5 and 6 Thoracolumbar/Lumbar Major AIS Curves at Minimum 5 Year Followup	L. Lenke , R. Lehman, B. Lonner, T. Errico, R. Betz, S. Shah, H. Shufflebarger, M. Kelly, P. Newton, K. Blanke, Harms Study Group
09:15-09:20	A140	ISYQOL discriminates better than the SRS-22 subgroups of adolescents with spinal deformities	A. Caronni, S. Donzelli, L. Sciumè, O. Amata, F. Di Felice, S. Minnella , F. Zaina, S. Negrini
09:20-09:25	A141	Use of Intraoperative Traction in Adolescent Idiopathic Scoliosis: Impact on Concave Apical Screws Density, Curve Correction and Functional Outcomes	H. Suthar , M. Yarlagadda, S. Hegde, C. Chikhale, M. Jindal
09:25-09:30	A142	The development of an adolescent spine deformity surgery core outcome set for the Nordic spine registries. A project supported by the AOSpine knowledge forum deformity	S. Faraj , M. Van Hooff, R. Holewijn, N. Germscheid, T. Haanstra, M. De Kleuver
09:30-09:35	A143	Is there still a place for convex hemiepiphysiodesis in congenital scoliosis in young children? A long term follow-up	G. Kreichati, M. Rizkallah, E. Choufani, K. Kharrat
09:35-09:40	A144	ISYQOL: new quality of life questionnaire for adolescents with spinal deformities developed through Rasch analysis	A. Caronni, L. Sciumè, S. Donzelli, O. Amata, F. Di Felice, S. Minnella , F. Zaina, S. Negrini
09:40-09:45	A145	Magnetically Controlled Growing Rods with Maximal Distraction: A New Mode of Failure	C. Jones , F. Brooks, A. Clarke, M. Hutton, S. Khan, D. Chan, O. Stokes
09:45-10:00		Discussion	All

09:00-10:00		CERVICAL MYELOPATHY (Room: Blue 2)	Moderators: Alessandro Ducati Eric Klineberg
09:00-09:05	A146	Combinatorial Surgical and Neuroprotective Therapy for Cervical Spondylotic Myelopathy Results in Improved Neurological Function: from Preclinical Proof of Concept to a Phase III Randomized Controlled Trial	M. Fehlings , S. Karadimas, B. Kopjar, P. Arnold
09:05-09:10	A147	Congenital Cervical Spine Stenosis in a Global Cohort of Patients with Degenerative Cervical Myelopathy: A Report Based on a MRI Diagnostic Criterion	A. Nouri , L. Tetreault, A. Martin, A. Nater, S. Nori, M. Shamji, M. Fehlings
09:10-09:15	A148	Multilevel cervical spondylo-arthopathy with or without myelopathy: Evaluation of long term-follow-up between anterior and posterior approach	G. Barbagli
09:15-09:20	A149	Prediction of Outcome following Surgical Treatment of Cervical Myelopathy Based on Features of Ossification of the Posterior Longitudinal Ligament: A Systematic Review	H. Nakashima, L. Tetreault , S. Kato, M. Kryshtalskyj, N. Nagoshi, A. Nouri, A. Singh, M. Fehlings
09:20-09:25	A150	Correlation and profile of quality of life and functional outcome measures for cervical spondylotic myelopathy after surgery	Z. Yilong , Y. Sun, F. Zhou
09:25-09:30	A151	Functional and clinical outcome after circumferential decompression (360 degrees) surgical treatment of severe degenerative cervical spondylotic myelopathy in the elderly patients	M. Tellez-Gtz
09:30-09:35	A152	Increased segmental range of motion is correlated with spondylolisthesis in the cervical spine after laminoplasty	E. Iwata, M. Tanaka, A. Okuda, Y. Morimoto, K. Masuda, Y. Tanaka, H. Shigematsu 
09:35-09:40	A153	Cervical fusion with expandable corpectomy device	L. Ruiz Cardoso , O. Tortolero Barron, A. Gonzalez Moga, M. Fuentes Rivera, J. Guzman Carranza, H. Santos Benitez
09:40-09:45	A154	To evaluate the results of a single staged simultaneous decompression surgery for tandem spinal stenosis—a review of 149 patients	S. Bhojraj, P. Patel , P. Nagad
09:45-10:00		Discussion	All

09:00-10:00		LUMBAR SURGERY 1 (Room: Yellow 1)	Moderators: Christopher Shaffrey Imad Ahmad
09:00-09:05	A155	Reposition of vertebra in low-grade lumbar spondylolisthesis: influence on the clinical outcome and shape of lumbar lordosis	M. Kuhta, M. Vodigar, B. Bricelj, M. Vogrin, R. Vengust
09:05-09:10	A156	Can Liposomal Bupivacaine Be Safely Utilized in Patients Undergoing Spine Surgery?	L. Brown, J. Juaregui, S. Koenig, M. Shasti, Steven C. Ludwig, D. Gelb , K. Banagan, E. Koh
09:10-09:15	A157	The long-term clinical efficacy of single segment lumbar 4-5 fusion and its effect on the lumbar-pelvis sagittal alignment parameter	Z. Wang, X. Hu , Z. Luo
09:15-09:20	A158	Continuous outcome monitoring to improve quality of spine surgery in patients with degenerative lumbar spine disorders	M. Van Hooff , D. Groot, P. Horsting, M. Spruit, L. De Klerk, E. Van Den Eede, T. Stevens, D. Plumers, J. Van Loon, M. De Kleuver
09:20-09:25	A159	Quality of life in patients who underwent lumbar spine fusion surgery compared with adjusted normal Italian population: a pilot study	S. Padovani , T. Amoroso, G. Caruso, M. Bianconi, G. Valpiani, L. Massari
09:25-09:30	A160	Comparison of peri-operative and short term outcomes between minimally invasive and conventional lumbar interbody fusion	A. Nadig , J. George, J. Virdee
09:30-09:35	A161	The Use of Cortical Bone Trajectory Technique in Preventing Implant Loosening in Osteoporotic Spines	K.S. Oh
09:35-09:40	A162	Correlation between outcome measurement tools in patients with lumbar spine fusion for degenerative disease	R. Rocha , R. Motta, C. Oliveira, R. Pratali
09:40-09:45	A163	Trends and costs of external electric bone stimulators and grafting materials in anterior lumbar interbody fusion	A. D'Oro, Z. Buser , Jong-Beom Park, S. Tim Yoon, D. Brodke, J. Youssef, Hans-Joerg Meisel, K. Radcliff, P. Hsieh, J. Wang
09:45-10:00		Discussion	All

09:00-10:00		SPINE INFECTIONS 2 (Room: Yellow 3)	Moderators: Chung Chek Wong Bizhan Aarabi
09:00-09:05	A164	Evaluation of intra-wound povidone-iodine irrigation and intra-wound vancomycin powder in the prevention of surgical site infection in spinal surgery	J. Lemans , C. Öner, M. Ekkelenkamp, C. Vogely, M. Krut
09:05-09:10	A165	Predicting the need for surgical intervention in patients with Spondylodiscitis - The Brighton Score	N. Appalanaidu , C. Gee, K. Brogan, S. Karmani, S. Elsayed
09:10-09:15	A166	Vertebral form of non-bacterial osteomyelitis in children	O. Kopchak, M. Kostik, A. Maletin, A. Mushkin
09:15-09:20	A167	One or two-level spondylodiscitis between D11 and L5 treated with mini-open extreme lateral debridement and fusion in combination with posterior percutaneous fixation	C. Arvinus , R. Luque, I. Dominguez, J. Rey, M. Noriega, J. Alia
09:20-09:25	A168	Detection and Quantification of Bacteria in Degenerating Intervertebral Discs	J. Hu, K. Raasck , L. Haglund, P. Jarzem
09:25-09:30	A169	Spinal reconstruction in early-age pediatric patients with vertebral lesions: 3 years follow-up of 20 consecutive cases	D. Naumov , A. Mushkin
09:30-09:35	A170	Pyogenic spondylodiscitis: epidemiology, diagnosis and treatment of 205 patients with two-year follow-up	E. Pola , G. Autore, L. Nasto, D. Colangelo, V. Formica, V. Pambianco, M. Fantoni, F. Tamburrelli, G. Maccauro
09:35-09:40	A171	Spinal infections: Analysis of 600 patients over 11 years	H. Abdelrahman , M. Shousha, H. Boehm
09:40-10:00		Discussion	All


10:00-10:30		Break	
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10:30-11:30 AOSpine Past Fellows session—AOSpine Past Fellows Research Session (Room: Yellow 2)
Speaker: Emre Acaroglu


10:30-11:30 Paper Sessions

10:30-11:30		DEFORMITY (Room: Red)	Moderators: Lawrence Lenke Yong Hai
10:30-10:35	A172	Technical report of an oblique osteotomy of the spine for surgical correction of severe scoliosis	M.A. Farfan , C. Montero Silva, D. Meneses Quintero, F. Alvarado Gomez, W. Godoy Carrero, D. Rosero Rodriguez, J. Ruiz Herrera, C. Castellanos Mendoza
10:35-10:40	A173	Progression of untreated Scheuermann's kyphosis—radiographs after mean follow-up of 46 years	L. Ristolainen , J.A. Kettunen, M. Heliövaara, U.M. Kujala, A. Heinonen, D. Schlenzka
10:40-10:45	A174	Is use of posterior spinal instrumentation beneficial in surgically treating myelopathy associated with posterior longitudinal ligament of the thoracic spine?	K. Miyamoto , K. Fushimi, C. Iwai, Y. Kondo, H. Akiyama, K. Shimizu
10:45-10:50	A175	Management of Severe Kyphosis in Spina Bifida Patients	S. Ryabykh , D. Savin, A. Mushkin, A. Gubin
10:50-10:55	A176	No relation between lumbopelvic mismatch and poor outcome in thoracic hyperkyphosis corrections	D. Wong Chung , M. Van Hooff, M. De Kleuver, H. Graat, R. Hoogendoorn
10:55-11:00	A177	Cervical sagittal alignment in AIS	G. La Maida , M. Ferraro, A. Della Valle, F. Locatelli, B. Misaggi
11:00-11:05	A178	Tilt on traction: A new parameter to decide the lower instrumented vertebra in scoliosis correction	H. Suthar , M. Yarlagadda, S. Hegde, C. Chikhale, M. Jindal
11:05-11:10	A179	Anterior Spinal Overgrowth is not exclusive for Idiopathic Scoliosis, and is located in the disc	R. Brink , T. Schlösser, D. Colo, L. Vavruch, M. Van Stralen, K. Vincken, M. Malmqvist, M. Kruyt, H. Tropp, R. Castelein
11:10-11:15	A180	Distal Adding-on and Risk Factors in Severe and Rigid Scoliosis	L. Zang, S. Yuan, Y. Hai
11:15-11:30		Discussion	All


Friday


10:30-11:30		CERVICAL SURGERY (Room: Blue 2)	Moderators: John Webb Manabu Ito
10:30-10:35	A181	Inpatient Outcomes in Dialysis Dependent Patients Undergoing Elective Cervical Spine Surgery for Degenerative Cervical Conditions	A. Chung, S. Mitchell, J. Hustedt, N. Olmscheid, R. Waldrop, N. Chutkan
10:35-10:40	A182	Impact of C1 laminectomy without fusion on upper cervical instability	T. Jeong , S. Lee, W. Kim, S. Son
10:40-10:45	A183	Adjacent Segment Disease after Anterior Cervical Interbody Fusion using Conventional Plate versus Zero-Profile Implant—A Preliminary Report	Jae-Sung Ahn, Ho-Jin Lee, K. Lee
10:45-10:50	A184	Influence of neck postural changes on cervical spine motion and angle during swallowing	J. Kim, J. Hong , I. Kim, J. Kwon, J. Lee
10:50-10:55	A185	Malnutrition Is More Than Just Low Serum Protein And Is Associated With Poor Outcomes And Increased Hospital Costs In Patients Undergoing Elective Cervical Spine Surgery	A. Chung, B. Eyberg , J. Hustedt, N. Olmscheid, N. Chutkan, R. Waldrop
10:55-11:00	A186	Dose additional uncinete resection increase pseudarthrosis following anterior cervical discectomy and fusion?	Jong-Min Baik , Dong-Ho Lee
11:00-11:05	A187	Associations between Modic changes and Cervical degenerative disease	G. Song , D. Son
11:05-11:10	A188	Is there a need to bridge the cervico-thoracic junction in posterior multi-segmental instrumentation of the lower cervical spine?	G. Osterhoff , Yu-Mi Ryang, J. Von Oelhafen, B. Meyer, F. Ringel 
11:10-11:15	A189	Radiographic evaluation of the reliability of neck anatomic structures as anterior cervical surgical landmarks	J. Liu , X. Xiong, S. Huang, Z. Liu
11:15-11:30		Discussion	All

10:30-11:30		SPINE TRAUMA (Room: Yellow 1)	Moderators: José Maria Jimenez Abdulrazzaq Alobaid
10:30-10:35	A190	Quality of life after spinal cord injury—Results from a Canadian national cross-sectional survey	C. Iorio-Morin, V. Noonan, B. White, L. Noreau, J. Leblond, Frédéric S. Dumont, N. Dea 
10:35-10:40	A191	Missile injuries of the spine	H. Bhatoe
10:40-10:45	A192	Steroid use for acute spinal cord injury in Latin America: a potentially dangerous practice guided by fear of lawsuit	A. Falavigna , A. Teles, D. Riew, J. Cabrera
10:45-10:50	A193	Adverse Effects of Vasopressor Support for the Maintenance of Mean Arterial Pressure in Acute Spinal Cord Injuries	L. Hiatt , S. Theiss, T. Swain, G. McGwin
10:50-10:55	A194	A new concept of outcome measurement in spine trauma—The AOSpine Clinician Reported Outcome Spine Trauma (AOSpine CROST)	S. Sadiqi, Jorrit-Jan Verlaan, M. Lehr, M. Post, S. Muijs , J. Chapman, M. Dvorak, F. Kandziora, S. Rajasekaran, K. Schnake, A. Vaccaro, C. Oner
10:55-11:00	A195	International validation of the AOSpine Patient Reported Outcome Spine Trauma (AOSpine PROST)	S. Sadiqi, M. Lehr , M. Post, J. Chapman, M. Dvorak, F. Kandziora, S. Rajasekaran, K. Schnake, A. Vaccaro, C. Oner
11:00-11:05	A196	Outcome of Early Surgical Intervention in Spinal trauma patients, an overview of 109 spinal trauma patients	A. Dogar, A. Ahmed , H. Hussain, A. Aziz, S. Javed, N. Ahmed, R. Akram
11:05-11:10	A197	Spinal fractures in ankylosing spondylitis patients: a systematic review of the literature	A. Nunes , P. Fernandes, A. Cevadinha Caetano, J. Miguel Sousa, R. Mendes Almeida, J. Guimarães Consciência
11:10-11:15	A198	Acute traumatic spinal cord injury; determinants of outcome and challenges of care at the National Hospital Abuja	A. Yusuf , M. Mahmud, D. Jeneral Alfin, A. Aruna 
11:15-11:30		Discussion	All


10:30-11:30		NON-OPERATIVE MEDICAL TREATMENTS (Room: Yellow 3)	Moderators: Karsten Wiechert Max Aebi
10:30-10:35	A199	Complexities of Physical and Psychosocial Variables Independently Contribute to Resource Utilization after Lumbar Surgery	C. Mancuso , R. Duculan, F. Cammisa, A. Sama, A. Hughes, D. Lebl, F. Girardi
10:35-10:40	A200	Dispersal Pattern of Injectate after Cervical Epidural Steroid Injection Evaluated with Magnetic Resonance Imaging	C. Goldstein , T. Pashuck, K. Ingalls, C. James, L. Billings, M. Agha, M. Drymalski, T. Choma, J. Jeffries 
10:40-10:45	A201	Patient Satisfaction Does Not Correlate with Pain Medication Consumption in Postoperative	M. Bice, A. Abtahi, D. Barton, A. Presson, Q. Ding, B. Lawrence, D. Brodke , W. Ryan Spiker
10:45-10:50	A202	Epiduroscopic laser neural decompression—clinical significance and complications for 8 years	C. Kim , J. Kim
10:50-10:55	A203	Spondylolisthesis in elite athletes; Case series of effective rehabilitation with return to peak performance	R. Newsome , J. Shipley, M. Athanassacopoulos, A. Cole, R. Michael, L. Breakwell, J. Tomlinson, N. Chiverton
10:55-11:00	A204	Opioid use in relation to treatment outcome in patients with low back pain—data from a prospective randomized controlled trial	J. Dengler , B. Stuesson, D. Kools, D. Prestamburgo, R. Pflugmacher, P. Vajkoczy
11:00-11:05	A205	Back pain x leg pain—impact of quality of life in degenerative lumbar disease	R. Motta, R. Pratali , R. Rocha, C. Oliveira, M. Nogueira
11:05-11:10	A206	Influence on non-specific back pain and postural trunk control by whole-body vibration therapy	C. Melcher , W. Veronika, V. Jansson, C. Birkenmaier, S. Rarak, B. Wegener
11:10-11:15	A207	Treatment of Chronic Low Back Pain via Ablation of the Basivertebral Nerve: Results of a multicenter, randomized, double blinded, sham controlled trial (SMART Trial)	B. Meyer , R. Sasso, C. Yeung, H. Bae, A. Rhyne, J. Franke, P. Vajkoczy, M. De Palma, J. Fischgrund
11:15-11:30		Discussion	All



11:30-12:30 AOSpine Past Fellows session—Past Chairpersons of AOSpine: Encouraging Leaders (Room: Yellow 2) Moderator: Emre Acaroglu Speakers: Jeffrey Wang, John Webb, Luiz Vialle, Max Aebi, Emre Acaroglu

11:30-12:30 Paper Sessions			
11:30-12:30		ADOLESCENT SCOLIOSIS 3 (Room: Red)	Moderators: Youssry El Hawary Lawrence Lenke
11:30-11:35	A208	Modern Luque Trolley: Self-Growing Rod Construct to Manage EOS While Maintaining Spontaneous Spinal Growth	Y. Alabdulkarim , J. Ouellet, C. Ferland
11:35-11:40	A209	Could Shilla procedure prevent crankshaft phenomenon?	K. Kharrat , M. Rizkallah, A. Sebaaly
11:40-11:45	A210	Phenotyping Chronic Pain in Adolescents with Idiopathic Scoliosis: Preliminary Results of a Cohort Study	C. Ferland , My-Linh Ma, C. D'Aiuto, Diana-Luk Ye, J. Chong, N. Saran, S. Marchand, Jean A. Ouellet
11:45-11:50	A211	Radiological analysis of pedicle subtraction osteotomies in children	N. Babu , Arun-Kumar Viswanadha
11:50-11:55	A212	Patient-related outcomes in adolescent spine deformity surgery—A cohort study based on a single centre spine outcomes registry	M. Van Hooff , T. Stevens, P. Horsting, L. De Klerk, M. De Kleuver
11:55-12:00	A213	Vertebral modulation through Posterior Tethering Technique for Correction of Early Onset Scoliosis	A. Ahmad
12:00-12:05	A214	Radiographic and biomechanical study on Co-Cr rod in adolescent idiopathic scoliosis surgery	L. Scaramuzzo , F. Galbusera, F. Giudici, L. La Barbera, L. Minoia, C. Ottardi, M. Archetti, T. Villa, A. Zagra
12:05-12:10	A215	Corrosion of the internal mechanism of Magnetically Controlled Growth Rods explains the mechanism of failure	V. Panagiotopoulou , S. Tucker, H. Hothi, J. Henckel, A. Gibson, J. Leong, T. Ember, J. Skinner, A. Hart
12:10-12:15	A216	The Importance of Selective Thoracic Fusion in Thoracic Adolescent Idiopathic Scoliosis	Dong-Gune Chang , J. Yang, Jung-Hee Lee, Seung-Woo Suh, Jong-Beom Park, Jin-Hyok Kim, Se-il Suk 
12:15-12:30		Discussion	All

11:30-12:30		CERVICAL MYELOPATHY IMAGING (Room: Blue 2)	Moderators: Bizhan Aarabi Chung Chek Wong
11:30-11:35	A217	Multi-Parametric Microstructural Spinal Cord MRI Applied to Degenerative Cervical Myelopathy	A.R. Martin , B. De Leener, J. Cohen-Adad, David W. Cadotte, S. Kali-Ryan, S.F. Lange, L. Tetreault, A. Nouri, A. Crawley, David J. Mikulis, H. Ginsberg, M. Fehlings
11:35-11:40	A218	Quantitative Multiparametric Spinal Cord MRI Detects Subclinical Tissue Injury in Asymptomatic Cervical Spinal Cord Compression	A.R. Martin , B. De Leener, J. Cohen-Adad, David W. Cadotte, J.R. Wilson, L. Tetreault, A. Nouri, A. Crawley, D.J. Mikulis, H. Ginsberg, M. Fehlings
11:40-11:45	A219	Dynamic Compression of Cervical Spinal Cord in Symptomatic Patients: A Study With The Help of Kinetic MRI	T. Vu , S. Vo 
11:45-11:50	A220	Impact of Pre-operative Flexion and Extension MRI on Decision-Making for Cervical Spondylotic Myelopathy	B. Awad , K. Zaghoul
11:50-11:55	A221	Comparison of Pre-Operation Diffusion Tensor Imaging versus T2 Signal Intensity in a Large Series of Cervical Spondylotic Myelopathy Patients for Assessment of Disease Severity and Prognostication of Recovery	S. Shabani , H. Nguyen, A. Rao, M. Kaushal, S. Kurpad
11:55-12:00	A222	MRI Analysis of the Combined AOSpine North America and International Studies: The Prevalence and Spectrum of Pathologies in a Global Cohort of Patients with Degenerative Cervical Myelopathy	A. Nouri , A. Martin, L. Tetreault, A. Nater, H. Nakashima, N. Nagoshi, H. Reihani-Kermani, M. Fehlings
12:00-12:05	A223	Kinematic MRI in the identification of occult cervical spine pathology	R. Grazina , R. Rocha, J. Nunes, Ó. Alves, D. Monteiro, N. Almeida, M. Resende, H. Morais, S. Castro, D. Seixas
12:05-12:10	A224	Morphological characteristics of diffuse idiopathic skeletal hyperostosis in the cervical spine on computed tomography images	J. Bakker, J. Kuperus , H. Kuijf, C. Oner, P. De Jong, Jorrit-Jan Verlaan
12:10-12:15	A225	High Resolution Diffusion Tensor Imaging in Cervical Spondylotic Myelopathy: A Preliminary Follow-up Study	L. Guan, X. Chen, Y. Hai
12:15-12:30		Discussion	All

Friday

11:30-12:30		THORACOLUMBAR TRAUMA (Room: Yellow 1)	Moderator: José Maria Jimenez Patrick Hsieh
11:30-11:35	A226	Efficacy and Safety of Riluzole in Acute Spinal Cord Injury (SCI). Rationale and Design of AOSpine Phase III Multi-center Double Blinded Randomized Controlled Trial. (RISCIS)	M. Fehlings , B. Kopjar, R. Grossman
11:35-11:40	A227	Natural History, Mortality, Complications and Impact of Early Surgical Decompression in Thoracic Spinal Cord Injury: A Multicenter Prospective Study from the North American Clinical Trials Network and AOSpine Spinal Cord Injury Knowledge Forum	J.R. Wilson , J. Harrop, M. Fehlings, R. Grossman, E. Toups, B. Aarabi 
11:40-11:45	A228	How far can we go with percutaneous fixation of spinal fractures? A comparative study with open fixation in 110 patients with fractures of the thoracolumbar transition (T12-L1)	A. Figueiredo , A. Mendonça, P. Lourenço, C. Jardim, C. Alegre, F. Fonseca
11:45-11:50	A229	Early versus late surgery for traumatic spinal cord injury in the thoracic or thoracolumbar area—secondary results of a randomized controlled trial at one-year follow-up	E. Barzideh, A. Haghnegahdar, S. Saadat, P. Derakhshan , R. Behjat, A. Shahlaee, A. Niakan, A. Vaccaro, V. Rahimi-Movaghar
11:50-11:55	A230	Quality of life following thoracoscopic stabilization of traumatic thoracolumbar fractures with a distractable cage	A. Smits , A. Noor, F. Bakker, J. Deunk, J. Deunk, F. Bloemers
11:55-12:00	A231	The change of adjacent segment after thoracolumbar posterior instrumentation and fusion surgery in thoracolumbar fractures	Dong-Eun Shin, Tae-Keun Ahn
12:00-12:05	A232	Minimally Invasive Stabilisation of the Fractured Ankylosed spine: A comparative case series study	F. Brooks , D. Roy, B. Williams, M. Selby
12:05-12:10	A233	Percutaneous fluoroscopic—guided versus percutaneous 3D navigation—guided versus open pedicle screw fixation for treatment of thoracolumbar fractures without neurologic deficits	M. Roclawski , R. Pankowski, W. Kloc, S. Adamski, W. Libionka, M. Ceynowa
12:10-12:15	A234	Sacral fractures with spondylopelvic dissociation	I. Barni
12:15-12:30		Discussion	All

11:30-12:30	SPINE BIOLOGICS (Room: Yellow 3)		Moderators: Giovanni Barbanti Brodano Tim Yoon
11:30-11:35	A235	Human Intervertebral Disc Cells hinder Primary Human Osteoblasts and Stromal Cells to undergo Osteogenesis	R. May , A. Tekari, S. Chan, D. Frauchiger, L.M. Benneker, S. Kohl, B. Gantenbein
11:35-11:40	A236	Comparison of Outcomes Between Artificial Disc Replacements and Bone Marrow Concentrate Injections for Chronic Discogenic Low Back Pain—2 year follow up	F. Techy , S. Costa, T. Santomaso, K. Pettine 
11:40-11:45	A237	Destiny of allogeneic Tie2+ cells from isolation to injection into intervertebral discs in organ explant culture	D. Frauchiger , A. Tekari, L.M. Benneker, D. Sakai, B. Gantenbein
11:45-11:50	A238	Intervertebral disc repair by combining genipin-enhanced fibrin hydrogel and engineered silk-fleece	D. Frauchiger , S. Heeb, A. Tekari, M. Wöltje, L.M. Benneker, B. Gantenbein
11:50-11:55	A239	Effects of Systemic PEGylated NELL-1 on Bone Healing and Density in a Mouse Model	E. Lord , J. Tanjaya, J. Kwak, E. Chen, K. Khalilinejad, J. Wang, C. Soo, K. Ting
11:55-12:00	A240	The Effect of The Extra Dural Compression on The Intraspinal Pressure, In Vitro Study	M.A. Mansi , J. Hines, M. Bassi, P. Barriga, R. Reindl, J. Ouellet, P. Jarzem
12:00-12:05	A241	The effects of combined high-dose parathyroid hormone (PTH 1-34) and low dose bone morphogenetic protein 2 (BMP-2) treatment in a rabbit model of lumbar spinal fusion	C. Holmes, W. Ishida, B. Elder, Sheng-Fu Larry Lo, M. Taylor, J. Locke, T. Witham 
12:05-12:10	A242	Mesenchymal progenitor cells primed with pentosan polysulfate mediate disc repair following microdiscectomy in an ovine model	C. Daly , P. Ghosh, T. Badal, R. Shimmon, I. Ghosh, G. Jenkin, D. Oehme, K. Jain, I. Sher, A. Vais, C. Cohen, T. Goldschlager
12:10-12:15	A243	Effect of RNA Interference (RNAi)-Mediated Suppression of Fas Gene on Viability of Rat Intervertebral Disc Cells	Jong-Beom Park
12:15-12:30		Discussion	All

12:30-14:00 Industry Lunch Symposia

14:00-15:00	Symposium Hosted by AOSpine and European Association of Neurosurgical Societies—Sagittal imbalance: when and why to stop correction? (Room: Red)		Moderators: Bernhard Meyer Massimo Balsano
14:00-14:15		Sagittal imbalance in cervical spine disease: a segmental or global spine problem? Indications and surgical strategies for correction	Ehab Shiban, Massimo Balsano
14:15-14:30		Sagittal imbalance in degenerative scoliosis and lumbar spine degenerative disease: Indications for correction, surgical goals to improve functional outcome and how to prevent complications	Peter Vajkoczy, Claudio Lamartina
14:30-14:45		Sagittal imbalance in post-traumatic deformity. From "minor" to "major" cases: when, how and why to correct	Florian Ringel, Patrick Tropiano
14:45-15:00		Discussion	All


14:00-15:00	Symposium Hosted by AOSpine Knowledge Forum Degenerative/ Biologics—Updates on Grafts and Biomaterials in Lumbar Spine Surgery (Room: Blue 2)		Moderators: Patrick Hsieh Tim Yoon
14:00-14:05		Opening Remarks	Jeffrey Wang
14:05-14:15		Evidence-Based Classification of grafts and biomaterials for spine fusion	Tim Yoon
14:15-14:25		Optimizing graft choices to achieve arthrodesis in adult spinal deformity surgery	Darrel Brodke
14:25-14:35		Stem cells for lumbar fusion: Current practice and evidence	Patrick Hsieh
14:35-14:45		Novel biologics for spine fusion and disc repair	Zorica Buser
		Debate: Allograft versus PEEK and novel biomaterial for Lumbar Interbody Fusion	All
14:45-14:50		Allograft optimizes lumbar interbody fusion	Jong Beom Park
14:50-14:55		PEEK and Nanosurface technology	Hans Jörg Meisel
14:55-15:00		Discussion	All

14:00-15:00	Symposium Hosted by AO Alliance—Neurotrauma in the developing world: every little bit helps (Room: Yellow 1)	Moderator: Claude Martin
14:00-14:10	Training a generalist spine surgeon for LICs environment: is it possible?	Alex Buteera
14:10-14:20	Neurotrauma education in LICs: what do we teach and what is our audience?	Brian Sonkwe
14:20-14:30	Global neurotrauma research challenges and opportunities	Valentine Mandizvidza
14:30-14:40	Returning home after a spine fellowship: what can I do?	Boston Munthali
14:40-15:00	Questions and Answers	All

14:00-15:00	Symposium—Mismatches between imaging and clinical findings (Room: Yellow 3)	Moderators: Max Aebi Alberto Zerbi
14:00-14:05	Introduction	Max Aebi
14:05-14:20	The clinician point of view in degenerative and trauma patients	Pedro Berjano
14:20-14:35	Clinical relevance of degenerative manifestation of the lumbar spine	John Carrino
14:35-14:50	Imaging in trauma patients	Gustav Andreisek
14:50-15:00	Open discussion	All

15.00-15:30 Paper Sessions

15:00-15:30		MINIMALLY INVASIVE SPINE SURGERY LATERAL LUMBAR FUSION (Room: Red)	Moderator: Paul Thng Roger Härtl
15:00-15:05	A244	Comparative study at difference of perioperative complication, cage location and sagittal alignment; MIS-OLIF (minimally invasive oblique lateral lumbar interbody fusion) vs. MIS-DLIF (direct lateral lumbar interbody fusion)	Jung-Woo Hur , Kyeong-Sik Ryu, Jin-Sung Kim, Ji-Hoon Seong, Hyun-Jin Cho, Ho-Jung Chung, Roger Härtl
15:05-15:10	A245	Does a Preoperative Pain Free Posture Predict Success of Indirect Decompression by Extreme Lateral Interbody Fusion (XLIF) in Degenerative Lumbar Spinal Conditions?	K. Lim , J. Brown, C. Daly, T. Goldschlager
15:10-15:15	A246	Sagittal alignment parameters in patients submitted to extreme—lateral interbody fusion (XLIFR) versus minimally invasive transforaminal lumbar interbody fusion (MIS-TLIF)	C. Menezes , D. Abreu Oliveira, R. Araujo Porto, A. Arruda
15:15-15:20	A247	Mini-Open Approach to Lateral Transpoatic Interbody Fusion of the Lumbar Spine: A Technical Perspective Comprising > 5,000 Levels	G. Fantini , A. Hughes, F. Girardi, A. Sama, C. Goodwin, F. Cammisa
15:20-15:30		Discussion	All

15:00-15:30		SURGICAL COMPLICATIONS (Room: Blue 2)	Moderators: Emiliano Vialle Benny Dahl
15:00-15:05	A248	Emergent Reintubation in Spine Patients	Z. Child, R. Bransford , A. Dagal, J. Agel
15:05-15:10	A249	Airway Adverse Events After Posterior Occipitocervical Fusion	V. Sheshadri, R. Moga, P. Manninen, C. Goldstein , Y. Raja Rampersaud, E. Massicotte, M. Fehlings, L. Venkatraghavan 
15:10-15:15	A250	The Effect of Pre-Operative Smoking on Short-Term Outcomes after Anterior Cervical Discectomy and Fusion	T. Purvis , Haroldo J. Rodriguez, A. Karim Ahmed, C. Boone, R. De La Garza-Ramos, C.R. Goodwin, D.M. Sciubba
15:15-15:20	A251	Renal Dysfunction in Lumbar Fusion Patients: Short-Term Complications in a Nationwide Sample	T. Purvis , Remi A. Kessler, C. Boone, B.D. Elder, C.R. Goodwin, D.M. Sciubba
15:20-15:30		Discussion	All



15:00-15:30		TUMOR 2 (Room: Yellow 1)	Moderators: Stefano Boriani Emre Acaroglu
15:00-15:05	A252	Unilateral laminectomy approach for the removal of spinal meningiomas and schwannomas: Impact on clinical outcomes and foraminal extension	Jong-Hyeok Park , W. Eoh, Eun-Sang Kim, Sun-Ho Lee
15:05-15:10	A253	The Management of Spinal Metastases from Renal Cell Carcinoma	O. Lapaeva, D. Ptashnikov , D. Mikhaylov, N. Zaborovskii, S. Masevnin, Z. Mooraby, Y. Lexz, O. Smekalenkov
15:10-15:15	A254	Metastatic Spinal Cord Compression: Effects of tumour type on survival	S. Aziz , P. Basu, S. Dhiran, J. Braybrooke, O. Gabbar, P. Sell, A. Law, W. Yoon
15:15-15:20	A255	Chromosomal deletion (22q13) may be associated with sacral chordoma recurrence	Á. Bozsódi , B. Scholtz, G. Papp, P. Varga, A. Lazary
15:20-15:30		Discussion	All

15:00-15:30		BIOMECHANICS (Room: Yellow 3)	Moderators: Stephen Lewis Tim Yoon
15:00-15:05	A256	The effect of an interspinous spacer on the pars interarticularis after minimally invasive lumbar decompression—a finite element analysis	H. Lo
15:05-15:10	A257	Optimal Cement Dosage and Configuration for Prophylactic Vertebroplasty Above Long Thoracolumbar Fusion Constructs to Reduce Proximal Junction Kyphosis (PJK): A Finite Element Model	D. Briski, J. Zavatsky , R. McGuire
15:10-15:15	A258	A biomechanical analysis of a novel growing rod for early onset scoliosis	C. Zong-Xing, W. Jaw-Lin, L. Po-Liang
15:15-15:20	A259	Biomechanical aspects of non-rigidity in lumbopelvic reconstruction following total sacrectomy	P. Eltes , L. Kiss, D. Lacroix, A. Lazary, P. Varga
15:20-15:30		Discussion	All

15:30-16:00	Break	
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16:00-16:45 AOSpine Members-only session—Prevention and Patient-Led Care in the New Health Economy (Room: Yellow 2)
Speakers: Dominik Hotz



16:00-16:45 Paper Sessions			
16:00-16:45		ADULT DEFORMITY 2 (Room: Red)	Moderators: Darrel Brodke Yong Qiu
16:00-16:05	A260	A retrospective value analysis of the management of primary adult spinal deformity	D. Beckerman, S. Berven , L. Racine, T. Sharf, M. Callahan, S. Burch, V. Deviren, S. Hu, B. Tay
16:05-16:10	A261	Development and Assessment of a Novel Adult Spinal Deformity (ASD) Frailty Index (ASD-FI) to Assist with Risk Stratification for ASD Surgery	E. Miller, B. Neuman, A. Jain, D.M. Sciubba, K. Kebaish, J. Scheer, J. Smith, C. Shaffrey, C. Ames
16:10-16:15	A262	Despite Higher Risk Stratification Scores, Frail Patients Achieve Greater Two-year Health Related Quality of Life Improvement from Baseline Compared to Non-frail Patients Following Adult Spinal Deformity Surgery	E. Miller, T. Ailon , J. Scheer, A. Daniels, D. Kojo Hamilton, J. Smith, C. Shaffrey, B. Neuman, K. Kebaish, C. Ames 
16:15-16:20	A263	Which clinical parameters of the Schwab-SRS classification system for ASD is significant in predicting treatment outcomes for surgically treated patients?	S. Yuksel, T. Mmopelwa, S. Ayhan, V. Nabiyeu , F. Pellise, A. Vila-Casademunt, A. Alanay, F. Perez Grueso, F. Kleinstuck, I. Obeid, E. Acaroglu, European Spine Study Group (ESSG)
16:20-16:25	A264	Factors associated with prolonged ventilation and reintubation in adult spinal deformity (ASD) surgery	R. De La Garza Ramos , J. Nakhla, R. Nasser, A. Jada, N. Haranhalli, D.M. Sciubba, R. Yassari
16:25-16:30	A265	Adult spinal deformity patients with previous fusions have an equal chance of reaching substantial clinical benefit thresholds in health-related quality of life measures but do not reach the same absolute level of improvement	T. Ailon , J. Smith, C. Shaffrey, A. Soroceanu, V. Lafage, F. Schwab, D. Burton, R. Hart, H. Kim, J. Gum, R. Hostin, M. Kelly, S. Glassman, J. Scheer, S. Bess, C. Ames 
16:30-16:45		Discussion	All

16:00-16:45		CERVICAL SURGERY COMPLICATIONS (Room: Blue 2)	Moderators: James Harrop Juan Emmerich
16:00-16:05	A266	Risk factors and clinical outcomes of dysphagia after anterior cervical surgery in patients with degenerative cervical myelopathy: Results from the Prospective AOSpine Studies	N. Nagoshi, L. Tetreault , H. Nakashima, P. Arnold, G. Barbagallo, B. Kopjar, M. Fehlings
16:05-16:10	A267	A new scoring system for evaluation early dysphagia after anterior cervical spine surgery: a prospective study	Z. Liu, J. Liu, W. Tong, S. Huang
16:10-16:15	A268	Preoperative radiographic parameters to predict a higher pseudarthrosis rate following anterior cervical discectomy and fusion	S. Choi , J. Cho, Jung-Ki Ha, Dong-Ho Lee
16:15-16:20	A269	Risk factors for Dysphagia after anterior cervical surgery: preliminary results from a prospective multicenter study of the AOSLA Group	A. Falavigna , D. Doze, J. Guyot, R. Yurac, J. Jimenez, B. Zárate, N. Scheverin, P. Jalón, O. Righesso, E. Sfredo, M. Koff
16:20-16:25	A270	The Effect of uncinat process resection on the subsidence in anterior cervical discectomy and fusion	D. Son , S. Lee
16:25-16:30	A271	Predictors of clinical outcome in cervical arthrodesis: Evaluation of physical, mental and social factors	E. Shiban , J. Thiel, U. Hoffmann, Y. Shiban, J. Lehmsberg, B. Meyer
16:30-16:45		Discussion	All

16:00-16:45		LUMBAR SURGERY 2 (Room: Yellow 1)	Moderators: Manabu Ito Lawrence Rhines
16:00-16:05	A272	Is there clinical evidence of galvanic corrosion in constructs with CoCr rods and Titanium screws?	V. Panagiotopoulou , H. Hothi, H. Anwar, S. Molloy, K. Rezajooi, J. Sutcliffe, J. Skinner, A. Hart
16:05-16:10	A273	A radiological evaluation of insertion S2 alar-iliac screw in the Japanese population	K. Masuda , H. Shigematsu, E. Iwata, M. Tanaka, A. Okuda, Y. Morimoto, Y. Tanaka, K. Kawate
16:10-16:15	A274	Autologous disc chondrocyte transplantation in lumbar spine disc degeneration disease—a prospective, controlled, randomized study	C. Hohaus , F. Didrigkeit, H. Meisel
16:15-16:20	A275	Factors influencing lumbar paraspinal fatty infiltration on MRI	S. Hoppe , D. Maurer, S. Ahmad, W. Valenzuela, L. Benneker
16:20-16:25	A276	Failed back surgery syndrome: is this patient created problem or surgeon created problem?	A. Younus
16:25-16:30	A277	Multiple Anterior Cages vs Osteotomies in Sagittal Imbalance Management	R. Bassani , F. Gregori, S. Brock, D. Gavino, G. Casero, C. Ferlinghetti
16:30-16:45		Discussion	All

16:00-16:45		TRAUMA CERVICAL 2 (Room: Yellow 3)	Moderators: Joseph Cheng Jong Beom Park
16:00-16:05	A278	The Impact of Translation and Stenosis on Spinal Cord Injuries in Traumatic Jumped Facet Injuries	R. Bransford, D. Glassman , E. Magnuson, J. Agel 
16:05-16:10	A279	Prospective Clinical and Radiographic Assessment of the Cervical Spine in Professional Rodeo Riders After Exposure to Greater than 10G Linear Acceleration	T. McClellan , A. Theologis, J. Shaw, J. Mulvihill, M. Zaid, C. Hess, J. Narvid, A. Gean, J. Larouche
16:10-16:15	A280	Glasgow Coma Scale score, Age and intramedullary lesion length on MRI are independent predictors of mortality in traumatic upper cervical spinal cord injuries	B. Aarabi , D. Hersh, D. Stein, E. Le, M. Simard, C. Sansur, D. Ibrahim, G. Schwartzbauer, C. Diaz, J. Massetti, N. Akhtar-Danesh
16:15-16:20	A281	Cervical facet dislocations in the adolescent population: a report of 21 cases at a Level 1 trauma center from 2004-2014	R. Bransford , A. Anissipour, J. Agel, C. Bellabarba
16:20-16:25	A282	Odontoid Synchondrosis Fracture in children: Report of 6 cases with special reference to posterior partial odontoidectomy in an irreducible atlantoaxial dislocation	A. Rahimizadeh
16:25-16:30	A283	A retrospective review of patients receiving cervical spine stabilization while being actively anticoagulated with heparin in the immediate perioperative period	Francis X. Camillo, S. Mitchell
16:30-16:45		Discussion	All

16:45-17:45 Spine Societies (Room: Red)

16:45-17:45	Symposium Hosted by EUROSPINE—New Technologies	Moderator: Marco Teli
16:45-17:00	Introduction	Marco Teli
17:00-17:15	New technologies for study design and research for surgeons	Margareta Nordin
17:15-17:30	Computer-assisted surgery in spinal trauma	Thomas Blattert
17:30-17:45	Corrective strategies in complex dystrophic spinal deformities	Marco Brayda-Bruno

16:45-17:45 Spine Societies (Room: Blue 2)

16:45-17:45	Symposium Hosted by Deutsche Wirbelsäulengesellschaft—Treatment standards in spine surgery—the German perspective	Moderators: Klaus Dieter Schaser Thomas Niemeyer Viola Bullmann
16:45-17:00	State of the art in thoracolumbar fractures	Alexander Disch
17:00-17:15	Lumbar spinal canal stenosis and degenerative spondylolisthesis	Thomas Niemeyer
17:15-17:30	Idiopathic scoliosis	Viola Bullmann
17:30-17:45	Vertebral tumours	Klaus Dieter Schaser

16:45-17:45 Spine Societies (Room: Yellow 1)

16:45-17:45	Symposium Hosted by Società Italiana di Chirurgia Vertebrale—Gruppo Italiano Scoliosi—Infections in Spine Surgery	Moderators: Bernardo Misaggi Tiziana Greggi Giuseppe Costanzo
16:45-16:52	Epidemiology, diagnosis and drug treatment of pyogenic spondylodiscitis	Massimo Fantoni
16:52-16:59	Proposal of a new classification for pyogenic spondylodiscitis	Enrico Pola/Francesco C. Tamburrelli
16:59-17:06	Pyogenic spondylodiscitis, spondylitis and degenerative disc disease: differential diagnosis	Alberto Zerbi
17:06-17:13	Surgical treatment of cervical spondylodiscitis	Vincenzo Denaro/Alberto Di Martino
17:13-17:20	Surgical treatment of dorso-lumbar spondylodiscitis	Giovanni Barbanti Brodano/ Alessandro Gasbarrini/Stefano Boriani
17:20-17:27	Pediatric spondylodiscitis	Marco Crostelli / Osvaldo Mazza
17:27-17:45	Discussion	All

16:45-17:45 Spine Societies (Room: Yellow 3)

16:45-17:45	Symposium Hosted by Société Française de Chirurgie Rachidienne—Management of Odontoid Fractures	Moderators: Patrick Tropiano Stéphane Fuentes
16:45-16:48	Introduction	Patrick Tropiano
16:48-16:58	Management of Odontoid fracture in young patients	Benjamin Blondel
16:58-17:03	Discussion	All
17:03-17:13	Management of Odontoid fracture in elderly patients	Patrick Tropiano
17:13-17:17	Discussion	All
17:17-17:27	MIS in the management of odontoid fractures	Stéphane Fuentes
17:27-17:32	Discussion	All
17:32-17:42	Management of special odontoid fractures	Stéphane Fuentes
17:42-17:45	Discussion	All

18:00-19:00 Cadaver lab—Industry sponsored symposium



Global Spine Congress
2017

Saturday

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Wednesday

Thursday

Friday

Saturday

E-posters

Disclosures

Authors

Saturday Program Schedule

08:00-09:00 Spine Societies (Room: Red)		
08:00-09:00	Symposium—Postoperative Problems in Spine Surgery patients	Moderator: Jens Chapman
08:00-08:05	Introduction	Jens Chapman
08:05-08:15	Intraop complications and when to use what diagnostics	John Street
08:15-08:25	Missed nonspinal pathology	Daniel Sciubba
08:25-08:35	Adjacent segment disease; why, what to look for and when do we intervene?	Darrel Brodke
08:35-08:45	Maximizing long-term outcomes of major spine surgery. What matters?	Justin Smith
08:45-09:00	Panel Discussion and Summary	All

08:00-09:00 Spine Societies (Room: Blue 2)		
08:00-09:00	Symposium Hosted by AOSpine Asia Pacific—Craniovertebral junction pathologies	Moderator: Manabu Ito
08:00-08:10	Case presentation of basilar invagination and Atlanto axial dislocation	Rudrappa Satish
08:10-08:20	Technique of Reduction and Decompression in C1-2 fixation	Jin Sup Yeom
08:20-08:25	Video—How do I do the reduction	Jin Sup Yeom
08:25-08:35	Vertebral artery injury—How to tackle?	Kshitij Chaudary
08:35-08:40	C1-2 transarticular fixation—Tips for surgery	Rudrappa Satish
08:40-08:45	C1-2 lateral mass fixation—Tips for surgery	Kshitij Chaudary
08:45-09:00	Questions and Answers	All




08:00-09:00 Spine Societies (Room: Yellow 1)		
08:00-09:00	Symposium Hosted by AOSpine Middle East—Spinal Infections	Moderators: Abdelaziz Al-Mutair Mohammad El-Sharkawi
08:00-08:05	Welcome and Introduction	Abdulaziz Al-Mutair
08:05-08:15	Spinal Infection Epidemiology, Pathophysiology, Laboratory and Radiological Diagnosis	Ghassan Skaf
08:15-08:25	Pyogenic Spondylodiscitis	Imad Ahmed
08:25-08:35	Spinal Tuberculosis	Youssry El Hawary
08:35-08:45	Atypical and Multidrug Resistant Spine Tuberculosis	Amer Aziz
08:45-08:55	Postsurgical Site Infection; Diagnosis, Management, Outcome, and Prognosis	Mohamed Abdel-Wanis
08:55-09:00	Discussion and conclusion	Abdulaziz Al-Mutair

08:00-09:00 Spine Societies (Room: Yellow 3)		
08:00-09:00	Symposium Hosted by AOVET—A pain in the neck—surgical advances in canine cervical diseases	
08:00-09:00	A pain in the neck—surgical advances in canine cervical diseases	Bianca Hettlich

09:00-10:00 AOSpine Members-only session—AOSpine Subaxial Classification System—Training and testing (Room: Yellow 2) Moderator: Cumhur Oner
Speakers: Cumhur Oner, Greg Schroeder



Saturday Program Schedule

09:00-10:00 Paper Sessions			
09:00-10:00		DEFORMITY—CERVICAL (Room: Red)	Moderators: Sigurd Berven Juan Emmerich
09:00-09:05	A284	Comparison of Frailty Based on Cervical and Global SVA Classification	E. Miller, B. Neuman, D.M. Sciubba , J. Scheer, J. Smith, K. Kebaish, C. Shaffrey, C. Ames 
09:05-09:10	A285	The Health Impact of Symptomatic Adult Cervical Deformity: Comparison to United States Population Norms and Chronic Disease States Based on the EQ-5D	J. Smith , B. Line, S. Bess, C. Shaffrey, H. Kim, G. Mundis, J. Scheer, E. Klineberg, R. Hostin, M. Gupta, A. Daniels, M. Kelly, J. Gum, F. Schwab, V. Lafage, R. Lafage, T. Ailon, P. Passias, T. Protopsaltis, T. Albert, K. Daniel Riew, R. Hart, D. Burton, V. Deviren, C. Ames
09:10-09:15	A286	Surgical treatment for kyphotic deformities of the cervical spine. A review of the surgical approaches and clinical outcomes	J. Stulik, P. Nesnidal, G. Swamy , Z. Klezl 
09:15-09:20	A287	Assessment of a Novel Adult Cervical Deformity (CD) Frailty Index (FI) as a Component of Preoperative Risk Stratification	E. Miller, B. Neuman, D.M. Sciubba , K. Kebaish, J. Scheer, J. Smith, C. Shaffrey, C. Ames 
09:20-09:25	A288	Iatrogenic cervical subaxial kyphotic deformity following C1/C2 fixation. Post-traumatic epiphenomenon or iatrogenic reciprocal change. A series of 20 cases.	J.M. Duff , J. J. Michael
09:25-09:30	A289	The application of one stage combined approach with circumferential osteotomy in the treatment of congenital cervical scoliosis	Y. Sun , F. Zhang, S. Pan, L. Zhang, Y. Diao, X. Chen, F. Zhou, Y. Zhao
09:30-09:35	A290	Significance of Multimodal intraoperative monitoring (MIOM) for the patients with Craniovertebral junction pathology	J. Hong , J. Lee, J. Kwon, I. Kim
09:35-09:40	A291	The impact of cervical sagittal alignment on post-operative outcome after anterior cervical fusion in patients without evident deformity. A new method to evaluate the right amount of cervical lordosis	M. Pecoraro , M. Ajello, N. Marengo, G. Pilloni, F. Penner, F. Zenga, D. Garbossa, A. Ducati
09:40-09:45	A292	Correlation Between Cervical Alignment and Neck Disability	R. Pratali, M. Motta , C. Oliveira
09:45-10:00		Discussion	All


Saturday

09:00-10:00		MINIMALLY INVASIVE SPINE SURGERY 2 (Room: Blue 2)	Moderators: Alessandro Ducati Andreas Korge
09:00-09:05	A293	Endoscopic Lumbar foraminal decompression: myth? or trustworthy?	Chul-Woo Lee , Kang-Jun Yoon
09:05-09:10	A294	Re-thoracoscopy after thoroscopically assisted spinal operations in prone position. Is it possible, is it dangerous, why was it necessary?	M. Shousha, H. El Saghir, H. Boehm
09:10-09:15	A295	Is the Virgin Surgery or Revision Surgery?: Transforaminal Percutaneous Endoscopic Lumbar Discectomy in the Recurred Lumbar Herniated Nucleus Pulposus after Open Lumbar Discectomy	Hyeun-Sung Kim
09:15-09:20	A296	Evaluating the feasibility of minimally invasive lateral mass screw instrumentation of the cervical spine: A cadaveric study	A. Kumar , R. Merrill, S. Qureshi
09:20-09:25	A297	The Teardrop Technique—Safe and Easy Iliac Screw Placement	C. Birkenmaier, B. Wegener, C. Melcher
09:25-09:30	A298	Uniportal Percutaneous Endoscopic Laminotomy with Flavectomy for the Lumbar Canal or Lateral Recess Stenosis	Chul-Woo Lee , Kang-Jun Yoon
09:30-09:35	A299	Prophylactic vertebral augmentation after intra-disc leakage due to kyphoplasty for the treatment of osteoporotic compression fracture: a retrospective cohort study	J. Jiang , W. Tian, B. Xiao
09:35-09:40	A300	Volumetric radiographic method to assess indirect decompression after ELIF using a new generation intraoperative CT scanner	R. Navarro-Ramirez , C. Berlin, I. Janssen, G. Lang, M. Avila, G. Askin, M. Zubkov, R. Härtl
09:40-09:45	A301	Cervical Radiculopathy Treated with Posterior Cervical Cages: Intra-operative and Clinical Outcomes in 76 patients	T. Niedzielak , R. Blok, J. Malloy, IV
09:45-10:00		Discussion	All

Saturday Program Schedule

09:00-10:00		LUMBAR STENOSIS (Room: Yellow 1)	Moderators: Imad Ahmad Luiz Vialle
09:00-09:05	A302	Blood Transfusions in Elective Lumbar Spine Surgery: Risk Factors, Inpatient Outcomes, and Resource Utilization	A. Chung , R. Digiovanni, J. Hustedt, N. Chutkan, R. Waldrop
09:05-09:10	A303	Advanced Age is Associated with Poorer Outcomes and Increased Hospital Resource Utilization in Patients Undergoing Elective Surgery for Degenerative Lumbar Conditions	A. Chung, P. Johnson, J. Hustedt, R. Waldrop, N. Olmscheid, N. Chutkan
09:10-09:15	A304	Transforaminal lumbar interbody fusion: influence on sagittal balance	E. Ribeiro , B. Direito Santos, A. Costa, R. Duarte, P. Varanda, M. Vieira Da Silva
09:15-09:20	A305	Robot-guided Pedicle Screw Fixation for Lumbar Spondylolisthesis—Long-term Clinical Outcomes and Revisions	ML. Schroder , V. Staartjes
09:20-09:25	A306	The Utility of Pre-Operative Labs in Predicting Post-Operative Complications Following Posterior Lumbar Fusion	N. Lakomkin, V. Goz, Joseph S. Cheng, D. Brodke , W.R. Spiker
09:25-09:30	A307	Short-term and middle-term effectiveness of caudal injections in patients with spinal stenosis. A prospective study	N. Valanos, I. Valanos, T. Tryfon, P. Pantelidis, A. Dimirios, A. Siozos , A. Kyriakidis
09:30-09:35	A308	Interspinous process decompression with the aspen device for lumbar spinal stenosis: results after 2 yrs. Follow-up	M. Balsano , A. Zachos, S. Negri, C. Doria
09:35-09:40	A309	Morphological, clinical and self-assessment classifications of lumbar spinal stenosis, useful for science only or a daily routine?	D. Bludovsky , D. Stepanek, M. Kulle
09:40-09:45	A310	The predictive formula of lumbar lordosis and lower lumbar lordosis regulated by pelvic incidence among old men	Youngbae B. Kim
09:45-10:00		Discussion	All


Saturday Program Schedule

09:00-10:00		SURGICAL COMPLICATIONS—DEFORMITY (Room: Yellow 3)	Moderator: Bryan Ashman Emiliano Vialle
09:00-09:05	A311	Use of the Adult Spinal Deformity (ASD) Frailty Index (ASD-FI) to Predict Major Complications in the Scolio-Risk 1 Multicenter, International Patient Database	E. Miller, L. Lenke, J. Scheer, K. Espinoza, B. Neuman, K. Kebaish, C. Ames
09:05-09:10	A312	Neurologic Complications Following Complex Adult Spinal Deformity Surgery: 2 Year Follow-up of the Scolio-Risk 1 Prospective, Multicenter, International Study	L. Lenke , C. Shaffrey, L. Carreon, K. Cheung, K. Kebaish, F. Schwab, F. Pellise, C. Ames, Q. Yong, B. Dahl, M. Fehlings, AOSpine Knowledge Forum Deformity
09:10-09:15	A313	Development and External Validation of the Adult Spine Deformity (ASD) Frailty Index (ASD-FI)	E. Miller, D.M. Sciubba, B. Neuman , A. Vila-Casademunt, K. Kebaish, F. Pellise, C. Ames 
09:15-09:20	A314	Reduced Post-Operative Infections and Revision Surgery with Plastic Surgery Closure in the Treatment of Neuromuscular Scoliosis	B.W. Cook , D. Briski, A. King, J. Zavatsky
09:20-09:25	A315	Complication Rates Associated with 3-Column Osteotomy in 82 Adult Spinal Deformity Patients: Retrospective Review of a Prospectively Collected Multicenter Consecutive Series with Minimum 2-Year Follow-Up	J. Smith , C. Shaffrey, E. Klineberg, V. Lafage, F. Schwab, R. Lafage, H. Kim, R. Hostin, G. Mundis, M. Gupta, B. Liabaud, J. Scheer, B. Diebo, T. Protopsaltis, M. Kelly, V. Deviren, R. Hart, D. Burton, S. Bess, C. Ames
09:25-09:30	A316	Bimodal Incidence and causes of proximal junctional kyphosis (PJK) in adult spinal deformity (ASD)	M. Gupta, B. Diebo, T. Protopsaltis, R. Hart, J. Smith , C. Ames, R. Lafage, J. Scheer, H. Kim, D. Burton, P. Passias, F. Schwab, V. Lafage, E. Klineberg, International Spine Study Group
09:30-09:35	A317	Risk stratification for patients undergoing surgical correction of scoliosis based on the rates of perioperative complications in a tertiary hospital between 2010-2014 and the review of the current literature	M.A. Farfan , F. Alvarado Gómez, Carlos S. Montero, D. Meneses Quintero, W. Godoy Carrero, J. Ruiz Herrera, D. Rosero Rodríguez
09:35-09:40	A318	Safety Attitudes Among Spinal Care Professionals: results of an international survey	P. Gadjradj , W. Rietdijk, B. Harhangi
09:40-09:45	A319	Searching for optimal position of bone graft in order to prevent dislodgement in multiple anterior cervical corpectomy and fusion	Y. Kondo , K. Miyamoto, K. Shimizu
09:45-10:00		Discussion	All

Saturday

10:00-10:30 Break


10:30-11:30 AOSpine Members-only session—AOSpine Sacral Classification System—Training and Testing (Room: Yellow 2) Moderator: Greg Schroeder Speakers: Cumhur Oner, Greg Schroeder, Carlo Bellabarba




Saturday Program Schedule

10:30-11:30 Paper Sessions			
10:30-11:30		ARTHROPLASTY—CERVICAL (Room: Red)	Moderators: Fernando Techy Zdenek Klezl
10:30-10:35	A320	30-day Readmission and Reoperation after Single-level Anterior Cervical Discectomy and Fusion versus Cervical Disc Replacement	N. Bhashyam, R. De La Garza Ramos, J. Nakhla, M. Kinon, R. Yassari PF
10:35-10:40	A321	Cervical Disc Arthroplasty versus Anterior Cervical Discectomy and Fusion(Short and Long Term Follow Up): A Systematic Review of Randomized controlled Trials	A. Tarawneh , S. Alawi, O. Janbek
10:40-10:45	A322	Multi-level fusion versus hybrid Surgery in three-Level cervical disc disease: Retrospective matched analysis of clinical and radiologic results in minimum 2-year follow-up	Jung-Woo Hur , Kyeong-Sik Ryu, Jin-Sung Kim, Ji-Hoon Seong, Hyun-Jin Cho, Ho-Jung Chung
10:45-10:50	A323	In vivo study on the effect of cervical arthroplasty on cervical spine biokinematics	Ó. Alves , R. Reinas, D. Kitumba, F. Pagaimo
10:50-10:55	A324	Hybrid Surgery for Multilevel Cervical Degeneration Disc Disease	G. Grasso
10:55-11:00	A325	Efficacy and safety of lumbar arthroplasty in degenerative disc disease	H. Santos Benitez, M. Fuentes Rivera, A. Gonzalez Moga, M. Castillo Urbina , G. Huerta Hernandez
11:00-11:05	A326	2 years functional outcome is predictive of a long-term results: a 10 years follow-up of BRYAN® cervical disc system on a 70 patients' series	V. Lavanga, S. Marco, R. Assietti
11:05-11:10	A327	Current Practice of Cervical Disk Arthroplasty: a Survey among 387 AOSpine International Members	T. Chin-See Chong , P. Gadjradi, R. Boelen, B. Harhangi
11:10-11:15	A328	Total Disc Replacement. Part I: Assessment of Clinical Outcomes and Disc Prosthesis Survival in the Lumbar Spine	L. Laugesen , R. Paulsen, Leah Y. Carreon, C. Ernst, M. Andersen
11:15-11:30		Discussion	All

10:30-11:30		ADULT DEFORMITY 3 (Room: Blue 2)	Moderators: Sigurd Berven Ahmet Alanay
10:30-10:35	A329	Predicting Sagittal Balance Correction after Bilateral Pelvic Osteotomy: A Mathematical Model	J. Sembrano , V. Zarei, J. Bechtold, S. Yson
10:35-10:40	A330	A less invasive technique for 360 degree deformity correction in ankylosing spondylitis. Does it really make a difference?	M. Ibrahim , M. El-Meshtawy, M. Shousha, H. Boehm
10:40-10:45	A331	Surgical Strategy Can Mitigate Effects of Patient Factors on Pseudarthrosis Rate at 2 Years Following Adult Deformity Surgery (ASD)	E. Miller, D. Kojo Hamilton, A. Daniels, B. Neuman , K. Kebaish, J. Scheer, J. Smith, C. Shaffrey, C. Ames PF
10:45-10:50	A332	Spinal deformity correction outcomes after long fusion with or without pelvis fixation in adults	N. Zaborovskii, D. Ptashnikov , D. Mikhaylov, O. Smekalenkov, S. Masevnin
10:50-10:55	A333	Risk factors for 30-day readmissions and reoperations after three-column osteotomy for complex spinal deformity	R. De La Garza Ramos, J. Nakhla , N. Bhashyam, R. Nasser, A. Jada, D.M. Sciubba, R. Yassari
10:55-11:00	A334	Clinical and radiographic assessment of a hybrid minimally invasive approach in moderate-severe adult lumbar deformity	L. Proietti , G. Barone, L. Ricciardi, E. Valenzi, G. Noia, A. Perna, I. Giannelli, F. Tamburrelli
11:00-11:05	A335	How Does The Sagittal Profile Change With Lumbar Surgical Decompression Without Fusion?	Yogesh K. Pithwa
11:05-11:10	A336	Safety and efficacy of multilevel XLIFs approaching the convex side of adult scoliosis above 30 degrees	A. Ramieri , M. Miscusi, F. Polli, G. Costanzo
11:10-11:30		Discussion	All

10:30-11:30		TUMOR 3 (Room: Yellow 1)	Moderators: Stefano Boriani Lorin Benneker
10:30-10:35	A337	En bloc resection versus intralesional surgery in the treatment of giant cell tumor of the spine	R. Charest-Morin , C. Fisher, P. Varga, Z. Gokaslan, L. Rhines, J. Reynold, M. Dekutoski, N. Quraishi, M. Bilsky, M. Fehlings, D. Chou, N. Germscheid, A. Luzatti, S. Boriani 
10:35-10:40	A338	Predictive Factors for Survival in Surgical Series of Symptomatic Metastatic Epidural Spinal Cord Compression: A Prospective North American Multi-Centre Study in 142 patients	A. Nater , M. Fehlings, L. Tetreault, B. Kopjar, A. Paul, M. Dekutoski, F. Joel, C. Fisher, J. France, G. Ziya, L. Rhines, P. Rose, A. Saghal, J. Schuster, A. Vaccaro
10:40-10:45	A339	Validity and Reliability of the Spine Oncology Study Group Outcomes Questionnaire (SOSGOQ)	A. Versteeg , A. Sahgal, L. Rhines, D.M. Sciubba, J. Schuster, M. Weber, M. Fehlings, M. Clarke, P. Arnold, Z. Gokaslan, C. Fisher, AOSpine Knowledge Forum Tumor
10:45-10:50	A340	Minimally invasive iliac screw fixation as a palliative option in management of painful metastatic lumbosacral deformity	G. Liu , M. Hasan, Hee-Kit Wong
10:50-10:55	A341	Patient-Reported Outcomes After Surgical Stabilization of Spinal Tumors: Symptom-Based Validation of the Spinal Instability Neoplastic Score (SINS) and Surgery	I. Hussain , O. Bazilai, A. Reiner, N. Distefano, I. Laufer
10:55-11:00	A342	Is intraoperative neurophysiological monitoring valuable predicting postoperative neurological recovery?	Y. Rho
11:00-11:05	A343	En block spondilectomies for malignant neoplasms in children: review of 18 cases	A. Luzzati , M. Alloisio, G. Perrucchini, L. Cannavò, G. Scotto, E. Gallazzi, C. Zoccali, R. Biagini, U. Cariboni
11:05-11:10	A344	Index for Extent of Surgery for Metastatic Spine Disease—"Intrusiveness Index"	N. Kumar , B. Tan, A. Zaw
11:10-11:15	A345	Utility of Intraoperative Neuromonitoring in the Resection of Spinal Tumors	N. Lakomkin, A. Mistry, S. Zuckerman, T. Ladner, R. Vasquez, J. Cheng
11:15-11:30		Discussion	All

10:30-11:30		NOVEL TECHNOLOGIES 2 (Room: Yellow 3)	Moderators: Michael Fehlings Luiz Vialle
10:30-10:35	A346	One-stage posterior selective and localized circumferential decompression with dekyphosis and instrumented fusion for thoracic myelopathy due to multilevel ossification of posterior longitudinal ligament	C. Sun , Z. Chen 
10:35-10:40	A347	5-year experience with magnetically controlled growing rods for the management of early-onset scoliosis: results, complications and considerations for final treatment	G. La Rosa, L. Ruzzini, S. Sessa, L. Oggiano
10:40-10:45	A348	Pedicle screw accuracy using 3D printed custom made guides	M. Agnoletto, R. Cecchinato , A. Redaelli, M. Damilano, P. Berjano, C. Lamartina
10:45-10:50	A349	Safety and Efficacy of A Novel Anterior Decompression Technique (Vertebral Body Sliding Osteotomy) for Ossification of Posterior Longitudinal Ligament of the Cervical Spine: Comparison of Postoperative Outcomes between Vertebral Body Sliding Osteot	C. Hong, Dong-Ho Lee , J. Cho
10:50-10:55	A350	Kyphoplasty Cement Encapsulation Biodegradable Balloon Catheter—Animal Study	A. Alobaid
10:55-11:00	A351	Spontaneous correction of vertebral rotation using Apifix in Adolescent Scoliosis	N. Sekouris , I. Fligger, K. Sultanis, N. Karavidas, L. Flouda
11:00-11:05	A352	Wearable Augmented Reality to aid percutaneous procedures in spine surgery	P. Parchi , F. Cutolo, L. Andreani, M. Carbone, V. Ferrari, M. Ferrari, M. Lisanti
11:05-11:10	A353	The assessment of 3-D spinal balance and range of motion using the Microsoft Kinect system	P. Curran, D. Beckerman , S. Burch
11:10-11:15	A354	Anterior distraction of the atlantoaxial joints for basilar invagination. A new technique	S. Patkar
11:15-11:30		Discussion	All

Saturday Program Schedule

11:30-12:30	Symposium Supported by Society of Lateral Access Surgery—What's the Place of Lateral Approach In a Spine Surgeon's Toolbox? (Room: Blue 2)	Moderators: Pedro Berjano Massimo Balsano
11:30-11:35	Introduction: Lateral approach after 12 years: past fashion or established technique?	Massimo Balsano
11:35-11:45	Lateral in primary cases: Same indications or specific uses?	Pedro Berjano
11:45-11:55	Lateral in revision cases: a powerful tool	Luiz Pimenta
11:55-12:05	Lateral in degenerative scoliosis: indications and advantages	Khai Lam
12:05-12:15	Lateral in sagittal imbalance	Cristiano Menezes
12:15-12:30	Q and A	All

11:30-12:30	Symposium Hosted by AOSpine Knowledge Forum Spinal Cord Injury—Latest AOSpine clinical practice guidelines: Degenerative Cervical Myelopathy and Traumatic Spinal Cord Injury (Room: Yellow 1)	Moderator: Michael Fehlings
11:30-11:33	Welcome and introduction	Michael Fehlings
11:33-11:39	Synergy between Degenerative Cervical Myelopathy and Spinal Cord Injury—what are the key questions?	Michael Fehlings
11:39-11:45	Overview of the Guidelines Process	Lindsay Tetreault
11:45-11:51	Role of surgery for mild, moderate and severe DCM—6 min—What is the evidence? What are the guidelines?	Brian Kwon
11:51-11:57	How should we manage the non-myelopathic patient with compression of the cervical cord?	Mark Kotter
11:57-12:03	Role and timing of surgery for traumatic spinal cord injury—what is the evidence?	Christina Goldstein
12:03-12:09	A re-evaluation of the role of methylprednisolone for traumatic spinal cord injury—what is the evidence?	Jefferson Wilson
12:09-12:15	Role of MRI in the management of SCI—an essential tool or a waste of time and money? What is the evidence?	Bizhan Aarabi
12:15-12:30	Discussion	Michael Fehlings

11:30-12:30	Symposium Hosted by AOSpine North America—Improving Surgical Quality in Spinal Deformity (Room: Yellow 3)	Moderator: Joseph Cheng
11:30-11:32	Introduction of AOSNA and Topic	Joseph Cheng / Darrel Brodke
11:32-11:44	Improving Biomechanical Quality in Spinal Deformity Surgery	Rani Nasser
11:44-11:56	Surgical Planning in Spinal Deformity: Quality and Costs	Jens Chapman
11:56-12:08	Techniques of Efficient Deformity Correction and Fixation	Sigurd Berven
12:08-12:20	Management of Common Complications in Spinal Deformity: Proximal Junctional Failure	Darrel Brodke
12:20-12:30	Discussion	All

12:30-12:45	Awards and closing ceremony—Global Spine Congress 2018 announcement (Room: Red)	Jeffrey Wang Claudio Lamartina Daniel K. Riew
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12:45-13:30	AOSpine Closing Symposium—Minimally invasive intervertebral support strategies in the lumbar spine (Room: Red)	Moderators: Roger Härtl Andreas Korge
12:45-12:50	Case presentation	Roger Härtl / Andreas Korge
12:50-13:00	Why I prefer MIS TLIF	Frank Kandziora
13:00-13:10	Why I prefer OLIF	Christoph Mehren
13:10-13:20	Why I prefer XLIF	Luiz Pimenta
13:20-13:30	Discussion	Roger Härtl / Andreas Korge

E-posters



E-posters

Disclosures

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- P001** Double crush syndrome of the vertebral artery loop and foraminal stenosis causing monoparesis
Y. Rho
- P002** Clinical Comparison of ProDisc-C and Prestige-LP Cervical Disc Prostheses
H. Choi, **S. Kurpad**, H. Soliman
- P003** Bone Loss of Vertebral Bodies at the Operation Segment after Cervical Arthroplasty; A potential Complication?
Dong-Hwa Heo, C. Park
- P004** Still physiologic after multi-level cervical ADR?: a preliminary result
Jun Ho Lee, Jung Hwan Lee
- P005** Hybrid construct for multilevel disc disease in lumbar spine
H. Santos Benitez, **M. Fuentes**, A. Gonzalez Moga, G. Huerta Hernandez, M. Castillo Urbina
- P006** Investigation of efficacy of treatment in spinal cord injury: Erythropoietin versus methylprednisolone.
O. Ozkunt, K. Sariyilmaz, H. Gemalmaz, S. Gürgen, F. Dikici
- P007** A New Superficial Anatomical Landmark for the Odontoid Process: An Anatomical Study
C. Fisahn, Michael J. Montalbano, M. Moisi, M. Loukas, Jens R. Chapman, Rod J. Oskouian, R. Shane Tubbs
- P008** Predicting the Effect of Bilateral Pelvic Osteotomy on Surrounding Muscles: A Mathematical Model
J. Sembrano, V. Zarei, J. Bechtold, S. Yson
- P009** Histological Evaluation of Lumbar Spine Changes in Rats with Collagen-induced Arthritis
T. Mihara, S. Tanishima, A. Tanida, H. Nagashima
- P010** Nasal chondrocytes are potential autologous cell-transplant candidates for treating degenerative disc disease
Max Hans-Peter Gay, A. Mehrkens, A. Barbero, I. Martin, S. Schaeren
- P011** Tissue expression of angiotensin I—converting enzyme (ACE) gene in the rotator muscles of patients with adolescent idiopathic scoliosis—A cross-sectional study
M. Wajchenberg, **D. Martins**, R. Luciano, R. Araujo, B. Schmidt, A. Oliveira, E. Puertas, S. Almeida, F. Faloppa
- P012** Benchmarking of fatty degeneration of multifidus muscle between MRI and histopathology in adolescent idiopathic scoliosis
M. Wajchenberg, **D. Martins**, R. Luciano, E. Paredes-Gamero, E. Fernandes, A. Oliveira, B. Schmidt
- P013** Systematic Review of Recovery on Spinal Cord Injury with Antioxidant Therapy in Rats
A. Falavigna, L. Ajiboye, M. Koff, N. Diel, L. Radelli, F. Bassanesi, N. Ferrarini, S. Cardoso
- P014** Categorization of spinal cord injury animal models
M. Sharif-Alhoseini, V. Rahimi-Movaghar
- P015** Fate of neurons after traumatic spinal cord injury in rats: A systematic review
Z. Hassannejad, S. Zadegan, K. Sajadi, **V. Rahimi-Movaghar**
- P016** Effect of disc dimensions on diffusion of solutes in healthy human intervertebral discs
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- P017** Identification and validation of self screening tests for cervical myelopathy
N. Babu, Arun-Kumar Viswanadha, A. Priyadarsini
- P018** Comparison of stability between in situ and after reduction instrumentation in the degenerative spondylolisthesis. An in vitro porcine model
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- P019** A Finite Element Analysis of force distribution differences in sagittal balance morphotypes
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- P020** Biomechanical evaluation of the potential of kyphoplasty to stabilize a traumatic instable spinal segment
R. Hartensuer, O. Riesenbeck, N. Czarnowski, A. Stump, M. Müller, D. Wähnert, M. Raschke
- P021** Quality and Quantity of Motion using Polycrystalline Diamond Cervical Total Disc Arthroplasty in One- and Two-Level Setting
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- P022** Biomechanical comparison for two types of sacropelvic fixation techniques based on finite element analysis
J. Shin, C. Lee, T. Goh, S. Son, J. Lee
- P023** Biomechanical Analysis of Anterior Cervical Discectomy and Fusion Supplemented with Machined Intrafacet Allograft Spacers
R. Hah, P. Anderson
- P024** Quantifying the quality of graft remodelling in cervical fusion
D. McNally, A. Parish, S. Johnson, G. Kesteloot

- P025** Trunk muscles cocontraction during sit-to-stand in individuals with and without chronic non-specific low back pain
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- P026** Increasing Simulated Disc Heights with Lordotic Interbody Devices Results in Indirect Decompression by Increasing Foraminal Volume: A Finite Element Analysis
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- P027** Growing Rod Treatment for Early Onset Scoliosis Increases Thoracic Volume
C. Ledonio, Po-Chih Lee, A. Erdman, **D.W. Polly**
- P028** Rod breakage and nonunion following pedicle subtraction osteotomy: a biomechanical study on rod number, configuration and use of adjacent interbody cages
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- P029** The Correlation between Abdominal Morphology and Adult Spinal Deformity (ASD) measured using Xiphoid-Pubic Angle (XPA): a multi-center cohort study
F. Langella, V. Lafage, Christopher P. Ames, S. Bess, D. Burton, H. Kim, R. Hostin, E. Klineberg, G. Mundis, F. Schwab, J. Smith, B. Liabaud, I. Issg, P. Berjano
- P030** Morphometric differences of vertebral bodies between scoliotic and non-scoliotic subjects
J. Buric, M. Dekleva
- P031** Surgeon neck syndrome: an entity proposed to cause neck pain in spine surgeons
N. Babu, **Arun-Kumar Viswanadha**, S. Raju
- P032** Kinematic MRI Analysis of the Lumbar Intervertebral Discs and Neural Foramina in Trunk Rotation
B. Ajeal, **O. Lawrence**, X. Yang, Y. Hicks, L. Nokes, K. Lyons, M. McCarthy
- P033** Relationship between cervical sagittal balance and curve patterns in adolescent idiopathic scoliosis
M. Lima, M. Risso, G. Zuiani, M. Lehoczki, M. Tebet, A. Rossato, E. Landim, P. Cavali, I. Guidolin Veiga, W. Pasqualini
- P034** Three-column Osteotomy for Correction of Cervical and Cervicothoracic Deformities: Alignment Changes and Early Complications in A Multicenter Prospective Series of 24 Patients
J. Smith, C. Shaffrey, R. Lafage, V. Lafage, F. Schwab, H. Kim, J. Scheer, T. Protosaltis, P. Passias, G. Mundis, R. Hart, B. Neuman, E. Klineberg, R. Hostin, S. Bess, V. Deviren, C. Ames
- P035** Outcomes of Operative Treatment for Adult Cervical Deformity: A Prospective Multicenter Assessment with 1-Year Follow-up
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- P036** Normative values of the cervical spine alignment: a prospective study on asymptomatic subjects
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- P037** Cervical spondylolysis over osteopetrotic spine
M. Benhamida, K. Habboubi, M. Bekkay, B. Oussama, A. Kherfani, M. Mestiri
- P038** Adjacent segment level disease in Klippel-Feil syndrome patients with congenital cervical fusion in the setting of anterolisthesis: Should management be altered in the presence of anterolisthesis?
F. Alonso, **C. Fisahn**, R. Shane Tubbs
- P039** Neglected adult Torticollis and maxillofacial deformity
A. Tonkaboni, B. Mirzashahi
- P040** The dropped head syndrome. Case report and literature review.
H. Dagostin De Arjona, R. Lima Lopes, R. D'ualessandro De Macedo, B. Pinto Coelho Fontes, G. Henrique C Ferreira, J. Andrade Neto, C. Magalhaes Menezes
- P041** How advantageous is it to insert screws into concave apex of a scoliotic curve?
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- P042** Growth Guiding Instrumentation for Early Onset Scoliosis: 15-years follow-up
A. Mezentsev, D. Petrenko, D. Demchenko, V. Krishnappa
- P043** Surgical correction in adolescent idiopathic scoliosis considering the pedicle screw density
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- P044** The Effect of Surgery and Postoperative Compensation on Shoulder Balance in Severe and Rigid Scoliosis
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- P045** Risk Factors of Postoperative Major Complication in Spine Deformity Surgery
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- P046** Outcomes and complications of S2-Iliac fixation in neuromuscular scoliosis, experience in a tertiary hospital
F. Alvarado Gomez, **C. Montero Silva**, D. Meneses Quintero, W. Godoy Carrero, J. Ruiz Herrera, D. Rosero Rodriguez
- P047** Outcome of selective fusion in Lenke type 1C and 5C Adolescent idiopathic scoliosis curves
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- P048** Short and mid-term results of surgical treatment of neuromuscular scoliosis
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- P049** Isolating changes in gait following surgery for high grade spondylolisthesis using 3D gait analysis
S. Munigangaiah, G. Holmes, C. Bruce, J. Trivedi, N. Davidson
- P050** Surgical correction with pedicular screw fixation of a kyphosis associated with Prune Belly Syndrome: A case report.
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- P051** Predicting surgical re-intervention after surgical treatment of adolescent idiopathic scoliosis
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- P052** Systematic review on the natural history of idiopathic scoliosis during growth
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- P054** Idiopathic scoliosis treated with brace—ready for surgery?
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- P065** The influence of age and gender on treatment results in surgically treated patients with adult spinal deformity (ASD)
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- P070** Surgical versus nonsurgical treatment of lumbar degenerative kyphosis
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- P071** Sagittal balance and SRS-30 outcome of adult patients with symptomatic spinal disorder categorized with SRS-Schwab adult deformity classification
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- P076** Back-Front-Back Lumbar Osteotomy and Re-Fusion for Flat Back Fusion
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- 07** Medical/Orthopaedic publications editorial/governing board
- 08** Board member/committee appointments for a society
- 09** Other support (please specify)

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A

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"Anterior Column Realignment and Posterior Fusion with Computer Assisted Rod Bending"

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I.R.C.C.S.

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Cadaver Lab LIVE demonstration (Room 2)

"Demonstrating procedural efficiencies in creating posterior lordosis from L3 to Sacrum to impact outcomes"

Operating surgeon

Joerg Franke (Germany)

Head and Chairman

Department of Spinal Surgery Klinikum Dortmund

Germany

Moderators

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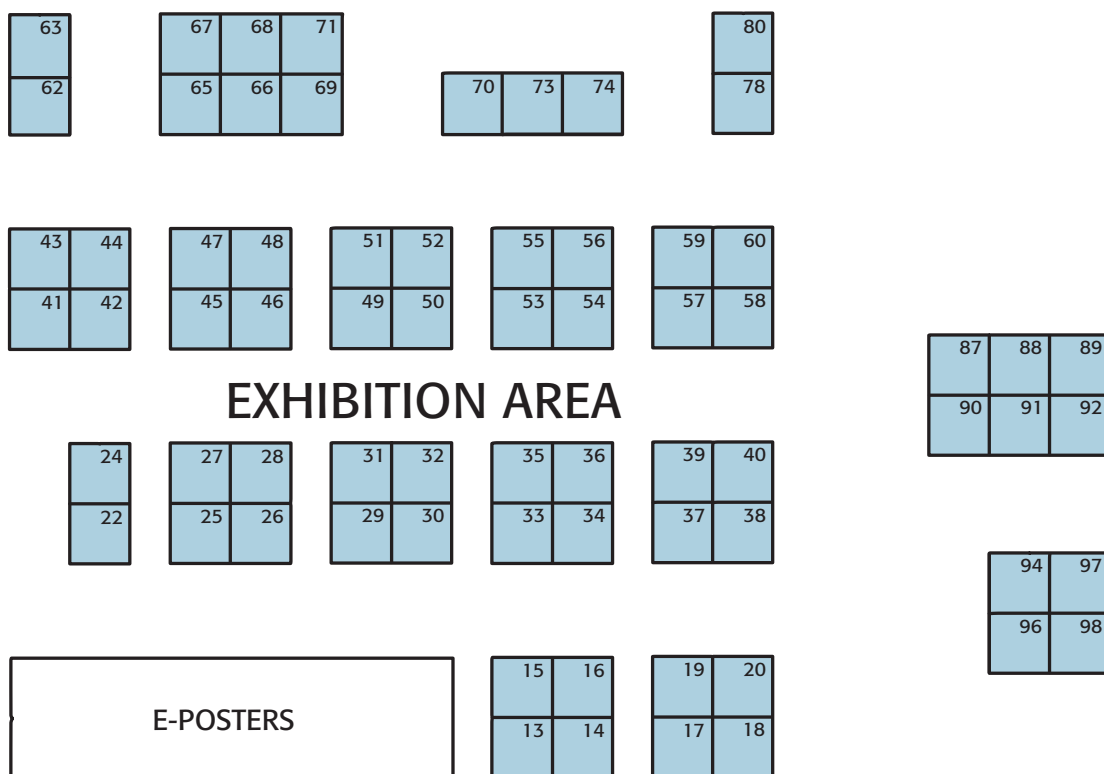
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Thursday, May 4

Lunch Symposium*

12:15-13:15 Siemens (Room: Red Plenary)

Advanced Robotic Imaging in Spine Surgery



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12:15-13:15 SMTP Technology (Room: Blue 2)

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Lunch Symposium*

12:15-13:15 NuVasive (Room: Yellow 1)

Sagittal Balance – Expert Panel Discussion



Friday, May 5

Lunch Symposium*

12:45-13:45 Medtronic (Room: Blue 2)

To PSO or not to PSO: When is this appropriate and what other technique creates necessary alignment



Lunch Symposium*

12:45-13:45 Baxter (Room: Yellow 3)

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