



Powered by the Scoliosis Research Society

Preliminary Program

**30th International Meeting on
Advanced Spine Techniques**

March 22-24, 2023 • Dublin, Ireland

IMAST COMMITTEE

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Eric O. Klineberg, MD, Chair Elect
Per D. Trobisch, MD, Co-Chair Elect
Kristen E. Jones, MD, Vice Chair
Ahmet Alanay, MD, Past Chair
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www.srs.org/imast2023





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DATES TO REMEMBER

Cancellation Refund Deadline

February 16, 2023

Advanced Registration Closes

March 1, 2023

On-Site Registration Opens

March 22, 2023

FUTURE EDUCATIONAL EVENTS

ANNUAL MEETING

[58th Annual Meeting](#)

September 6-9, 2023 | Seattle, WA, USA

59th Annual Meeting

September 11-14, 2024 | Barcelona, Spain

60th Annual Meeting

September 17-20, 2025 | Charlotte, NC, USA

61st Annual Meeting

October 7-10, 2026 | Sydney, Australia

INTERNATIONAL MEETING ON ADVANCED SPINE TECHNIQUES

31st IMAST

April 10-13, 2024 | San Diego, CA, USA

CHAIR'S MESSAGE

Dear Delegates and Attendees,

I would like to personally welcome you to the 30th International Meeting for Advanced Spine Techniques (IMAST), powered by the Scoliosis Research Society (SRS), in support of our continued advancements in spine surgery innovation.

Le chéile is the Irish word for “together” and sets the tone for how this IMAST will celebrate the 30th anniversary of this innovative, advanced meeting program.

This year we had more than 900 submitted abstracts and had the challenging task to narrow it to 63 Podium Presentations and 115 E-Point Presentations.

We are pleased to bring back the popular “Cases & Cocktails” sessions to kick off the meeting on Wednesday, March 22. These sessions are a great opportunity to discuss important cases in small groups with an IMAST faculty member present at each table. Topics will cover Vertebral Body Tethering, Adult Deformity and Cervical & Neurosurgery. Come hear expert opinions on tough and challenging cases in a relaxed setting.

The prestigious Whitecloud award-nominated scientific session—where the top 15 abstracts for best clinical and basic science/translational research—will be presented at the first session on Thursday, March 23. These are the best-of-the-best papers as selected by our scientific abstract reviewers.

On Friday evening, we invite you to join us for the [Innovation Celebration](#). The event will take place at *EPIC The Irish Emigration Museum* and will offer all attendees an opportunity to connect with peers, reflect on the meeting, celebrate innovation, and explore the museum.

The reception will celebrate the conclusion of sessions and lead attendees into Innovation Day on Saturday hosted by SRS industry partners.

As always, we offer a special thank you to our industry partners for their continued support. Plan your schedule accordingly so that you can see all of the latest innovations in the exhibit hall and during the Hands-on Workshops. More information on these can be found beginning on page 27.

On behalf of the planning committee, it was our pleasure to put this program together to celebrate the 30th anniversary of IMAST. We hope you will find it both informative and enjoyable.

Welcome to Dublin!



Stefan Parent, MD, PhD
IMAST Committee Chair



ABOUT SRS



Founded in 1966, the Scoliosis Research Society is an organization of medical professionals and researchers dedicated to improving care for patients with spinal deformities. Over the years, it has grown from a group of 37 orthopaedic surgeons to an international organization of more than 1,400 health care professionals.

MISSION STATEMENT

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

MEMBERSHIP

SRS is open to orthopaedic surgeons, neurosurgeons, researchers, and allied health professionals who have a practice that focuses on spinal deformity. Visit www.srs.org/professionals/membership for more information on membership types, requirement details, and to apply online.

PROGRAMS AND ACTIVITIES

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

WEBSITE INFORMATION

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

SCOLIOSIS RESEARCH SOCIETY

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Milwaukee, WI 53202
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SOCIAL MEDIA

Join the conversation surrounding IMAST by including #SRSIMAST23 in your social media posts.



@srs_org



@ScoliosisResearchSociety



@srs_org



@Scoliosis Research Society

DEI STATEMENT

The SRS recognizes the benefit of bringing the knowledge, perspectives, experiences and insights of a diverse membership to our society. We are committed to including outstanding members from the broad spectrum of human ethnicities, genders, sexual orientations, national origins, geographic backgrounds, abilities, disabilities, religious beliefs, and ages. We will create a culture that is equitable and inclusive, where everyone has a voice and differences are celebrated. By building a membership and leadership who better reflect the diverse communities we study and care for, we foster better and more equitable care for patients with spinal disorders.

GENERAL MEETING INFORMATION

MEETING DESCRIPTION

The 30th IMAST will offer an in-person meeting experience where leading spine surgeons, innovative researchers and the most advanced spine technologies come together in an international forum to demonstrate and discuss recent advances in spine surgery. IMAST focuses on innovative and new methods/techniques for spinal pathology. Educational content includes instructional course lectures, four-minute paper presentations, case discussions, E-Point Presentations and industry workshops all led by a multidisciplinary and international faculty.

LEARNING OBJECTIVES

Upon completion of IMAST, you should be able to:

- Analyze current research on new and future spine deformity treatments
- Identify appropriate candidates for minimally invasive surgery
- Evaluate popular approaches for continued relevance and improvement
- Utilize alignment goals for prevention of proximal junctional kyphosis
- Integrate robotics and navigation technology to assist surgery for pediatric and adult patients

TARGET AUDIENCE

Spine surgeons (orthopaedic and neurological surgeons), residents, fellows, nurses, nurse practitioners, physician assistants, engineers, and company personnel.

LANGUAGE

Presentations and course materials will be presented and provided in English.

ONLINE SPEAKER READY ROOM

The online Speaker Ready Room will open on January 22, 2023 and will close on March 17, 2023 at 16:30, GMT.

ACCME ACCREDITATION STATEMENT

This activity has been planned and implemented in accordance with the Essential Areas and Policies of the Accreditation Council for Continuing Medical Education (ACCME) through the sponsorship of the Scoliosis Research Society (SRS). SRS is accredited by the ACCME to provide continuing medical education for physicians.

CREDIT DESIGNATION

The Scoliosis Research Society designates this live activity, 30th IMAST, for a maximum of 13.75 *AMA PRA Category 1 Credits™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

CME CERTIFICATES

CME Certificates will be available to print onsite at the Printing Station for delegates that pre-registered. Delegates who register onsite will be able to claim CME within 30 days following the conclusion of the meeting.

DISCLOSURE OF CONFLICT OF INTEREST

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

FDA STATEMENT (UNITED STATES)

Some drugs and medical devices demonstrated during this virtual meeting have limited FDA labeling and marketing clearance. It is the responsibility of the physician to be aware of drug or device FDA labeling and marketing status.

INSURANCE/LIABILITIES AND DISCLAIMERS

The materials presented during this meeting are made available for educational purposes only. The material is not intended to represent the only, nor necessarily best, methods or procedures appropriate for the medical situations discussed, but rather is intended to present an approach, view, statement or opinion of the faculty that may be helpful to others who face similar situations. SRS disclaims any and all liability for injury or other damages resulting to any individual attending a scientific meeting and for all claims that may arise out of the use of techniques demonstrated therein by such individuals, whether these claims shall be asserted by a physician or any other person.

MEETING OVERVIEW

Times are subject to change.

	Wednesday, March 22	Thursday, March 23	Friday, March 24
Morning		07:00 – 18:00 Registration Open 08:00 – 09:00 Hands-On Workshops* <i>with breakfast</i> 09:00 – 09:30 Exhibit Viewing & Refreshment Break* 09:30-12:00 Session 1: Whitecloud Clinical Award Nominees & Presidential Address 12:00 - 12:15 Exhibit Viewing & Lunch Pick-Up*	07:00 – 17:00 Registration Open 07:30 – 08:30 Hands-On Workshops* <i>with breakfast</i> 08:30 – 09:00 Exhibit Viewing & Refreshment Break* 09:00 – 11:00 Concurrent Sessions 5A & 5B 11:00 – 11:30 Exhibit Viewing & Refreshment Break* 11:30 – 12:30 Hands-On Workshops* <i>Lunch Pick-Up (11:15-11:30)</i>
Afternoon	15:00 – 18:00 Registration Open	12:15 - 13:15 Hands-On Workshops* 13:15 - 13:45 Exhibit Viewing* 13:45 – 15:15 Concurrent Sessions 2A & 2B 15:15 – 15:45 Exhibit Viewing & Refreshment Break* 15:45 – 16:55 Concurrent Sessions 3A & 3B 16:55 – 17:15 Exhibit Viewing* 17:15 – 18:45 Session 4	12:30 – 12:45 Exhibit Viewing* 12:45 – 14:15 Concurrent Sessions 6A & 6B 14:15 – 14:30 Exhibit Viewing* 14:30 – 15:30 Hands-On Workshops* <i>with snacks & coffee</i> 15:30 – 16:00 Exhibit Viewing & Refreshment Break* 16:00 – 17:30 Session 7
Evening	16:00 – 18:00 Cases & Cocktails Discussion Sessions 18:00 – 20:00 Exhibit Viewing & Welcome Reception*		18:00 – 19:00 Faculty Reception* <i>(invitation only)</i> 19:00 – 22:00 Innovation Celebration*

*Denotes non-CME session

Saturday, March 25, 2023

[Innovation Day*](#)

Hosted by SRS Industry Partners. Please refer to the IMAST website for additional information.

REGISTRATION INFORMATION

KEY DATES

February 16, 2023: Cancellation and Refund Deadline

March 1, 2023: Advanced Registration Closes

March 22-24, 2023: 30th IMAST in Dublin, Ireland

REGISTRATION PROCEDURE

SRS encourages [online](#) registration. If you forgot your SRS username or password, click [here](#) to reset your username or password. PDF registration form is available, download the form [here](#). Please complete and return to: meetings@srs.org.

PRICING

Registration Class	Advanced Registration <i>On or before March 1, 2023</i>	Onsite Registration <i>March 22-24, 2023</i>
SRS Member – Physician	\$900	\$1,000
SRS Member – Non-Physician	\$450	\$550
SRS Emeritus Member	\$450	\$550
Non-Member Physician	\$1,100	\$1,200
Non-Member Non-Physician	\$550	\$650
Resident / Fellow / Medical Student	\$450	\$550
Delegate from Reduced Rate Country *	\$400	\$500
Industry Representative	\$1,150	\$1,250

*[Click here for countries that qualify for reduced rate registration.](#)

WHAT IS INCLUDED?

Registration policies are subject to change.

- Entrance to all general and concurrent sessions
- Admission to the industry hands-on workshops
- Meeting materials
- Refreshment breaks and lunch
- Certificate of attendance and CME credits
- Meeting app with ARS capabilities for an interactive meeting experience
- Access to meet face-to-face with exhibitors

CANCELLATIONS & REFUNDS

All cancellations must be received in writing. Delegates may email their cancellation requests to meetings@srs.org. Delegates will receive a confirmation and refund within 14 days of receipt of their cancellation notice. SRS will grant a full refund, less a 10% processing fee, for cancellations received in writing on or before February 16, 2023. **No refunds will be granted after February 16, 2023.**

QUESTIONS

For registration questions, please contact the SRS Meetings team at meetings@srs.org.

58TH ANNUAL MEETING

September 6-9, 2023

Seattle, Washington USA



Save the Date



Scoliosis
Research
Society

Abstract Submission Closes: **February 1, 2023**

Advanced Registration Opens: **April 25, 2023**

SCIENTIFIC PROGRAM

Topics and faculty are preliminary and subject to change.

WEDNESDAY, MARCH 22, 2023

15:00 - 18:00

Registration Open

16:00 - 18:00

Concurrent Sessions | Cases & Cocktails 1-3

Cases & Cocktails 1: Vertebral Body Tethering

Session Moderator: Ahmet Alanay, MD

Table Moderators: Baron S. Lonner, MD, Firoz Miyanji, MD, Randal R. Betz, MD, Ron El-Hawary, MD, MD, Stefan Parent, MD, PhD, & Per D. Trobisch, MD

Cases & Cocktails 2: Adult Deformity

Session Moderator: Eric O. Klineberg, MD

Table Moderators: Han Jo Kim, MD, Lawrence G. Lenke, MD, Ferran Pellisé, MD, PhD, Rajiv K. Sethi, MD, Kota Watanabe, MD, PhD, & Venu M. Nemani, MD, PhD

Cases & Cocktails 3: Cervical & Neurosurgery

Session Moderator: Christopher P. Ames, MD

Table Moderators: Robert K. Eastlack, MD, Calgar Yilgor, MD, Benny T. Dahl, MD, PhD, DMSci, Amer F. Samdani, MD, Tyler Koski, MD, & Gregory M. Mundis Jr., MD

18:00 - 20:00

Welcome Reception & Exhibitor Viewing*

A hosted reception featuring hors d'oeuvres, cocktails, exhibitor viewing and reunions with colleagues and friends. The Welcome Reception is included in the registration fee for all delegates. If you have already registered and would like to add the Welcome Reception and/or purchase guest ticket(s), you may do so here: [Add IMAST23 Event Tickets](#).

*Non-CME Sessions

SCIENTIFIC PROGRAM

Topics and faculty are preliminary and subject to change.

THURSDAY, MARCH 23, 2023

07:00 - 18:00

Registration Open

08:00 - 09:00

Industry Workshops*

09:00 - 17:15

Exhibit Hall Open

09:00 - 09:30

Refreshment Break & Exhibit Viewing*

09:30 - 12:00

Session 1: Whitecloud Award Nominees

Moderators: Eric O. Klineberg, MD & Stefan Parent, MD, PhD

09:30 - 09:35

Welcome Address
Stefan Parent, MD, PhD

09:35 - 09:40

Paper #1: Incidence of Tether Breakage in Anterior Vertebral Body Tethering
Patrick J. Cahill, MD; Firoz Miyanji, MD; Brett Lullo, MD; Amer F. Samdani, MD; Baron S. Lonner, MD; Joshua M. Pahys, MD; Steven W. Hwang, MD; Lawrence L. Haber, MD; Ahmet Alanay, MD; Suken A. Shah, MD; Stefan Parent, MD, PhD; Laurel C. Blakemore, MD; Dan Hoernschemeyer, MD; Kevin M. Neal, MD; Harms Study Group; Peter O. Newton, MD

09:40 - 09:45

Paper #2: Coronal Decompensation Following Vertebral Tethering in Idiopathic Scoliosis
Yoji Ogura, MD; Michelle C. Welborn, MD; A. Noelle Larson, MD; Laurel C. Blakemore, MD; Firoz Miyanji, MD; Lindsay M. Andras, MD; Stefan Parent, MD, PhD; Ron El-Hawary, MD

09:45 - 09:50

Paper #3: Follow-Up Report on Prospective FDA IDE Study on Vertebral Body Tethering for Idiopathic Scoliosis
Amer F. Samdani, MD; Joshua M. Pahys, MD; Harsh Grewal, MD; Jason Woloff, BS; Alejandro Quinonez, BS; Emily Nice, BS; Solomon Samuel, D. Eng.; Steven W. Hwang, MD

09:50 - 09:59

Discussion

09:59 - 10:04

Paper #4: What is the Rate of MRI-Identified Degenerative Disc Disease in Adolescent Idiopathic Scoliosis? Does it Impact SRS-22 Scores? A Review of 968 Cases
Conor T. Boylan, MD, BS; Ravindra Thimmaiah, MD, FRCS Tr & Orth; George McKay, FRCS; Adrian C. Gardner, FRCS Tr & Orth; Matthew P. Newton Ede, FRCS Tr & Orth; Jwalant S. Mehta, FRCS (Orth), MCh (Orth), MS (Orth), D Orth; Jonathan Spilsbury, FRCS Tr & Orth; David S. Marks, FRCSOrth; Morgan Jones, FRCS

10:04 - 10:09

Paper #5: Morphological Change in Vertebrae After Direct Vertebral Rotation Technique in Surgical Treatment of Adolescent Idiopathic Scoliosis: Long-term Longitudinal Study of Computed Tomography Evaluation of Vertebral Rotation
Dong-Gune Chang, MD, PhD; Lawrence G. Lenke, MD; Se-Il Suk, MD, PhD; Hong Jin Kim, MD; Jae Hyuk Yang, MD, PhD; Seoung Woo Suh, MD, PhD; Yunjin Nam, MD; Sung Cheol Park, MD

10:09 - 10:14

Paper #6: Do Tethered Spines Grow?
Daniel Farivar, BS; Michael Heffernan, MD; Ron El-Hawary, MD; A. Noelle Larson, MD; Firoz Miyanji, MD; Stefan Parent, MD, PhD; Lindsay M. Andras, MD; Pediatric Spine Study Group; David L. Skaggs, MD, MMM

10:14 - 10:23

Discussion

10:23 - 10:28

Paper #7: What Are We Transfusing? A Prospective Trial Evaluating the Quality of Intraoperatively Salvaged Red Blood Cells in Spinal Deformity Surgery
David Kurland, MD, PhD; Daniel Alber, BS; Darryl Lau, MD

*Non-CME Sessions

SCIENTIFIC PROGRAM

Topics and faculty are preliminary and subject to change.

THURSDAY, MARCH 23, 2023

- 10:28 - 10:33 Paper #8: Reoperation Rate after PSF Varies Significantly by Lenke Type
Peter Boufadel, BS; Baron S. Lonner, MD; Amer F. Samdani, MD; Joshua M. Pahys, MD; Suken A. Shah, MD; Paul D. Sponseller, MD, MBA
- 10:33 - 10:38 Paper #9: Decompression With or Without Fusion for Grade 1 Degenerative Lumbar Spondylolisthesis: 60-Month Outcomes From the QOD
Andrew K. Chan, MD; Erica F. Bisson, MPH; Mohamad Bydon, MD; Steven D. Glassman, MD; Kevin T. Foley, MD; Christopher I. Shaffrey, MD; Eric A. Potts, MD; Mark E. Shaffrey, MD; Domagoj Coric, MD; John J. Knightly, MD; Paul Park, MD; Michael Y. Wang, MD; Kai-Ming G. Fu, MD, PhD; Jonathan R. Slotkin, MD; Anthony L. Asher, MD; Michael S. Virk, MD, PhD; Vivian Le, MPH; Dean Chou, MD; Regis W. Haid Jr., MD; Praveen V. Mummaneni, MBA
- 10:38 - 10:47 Discussion
- 10:47 - 10:52 Paper # 10: The Incidence of Foetal Scoliosis and the chances of Successful Delivery
Sam Walters, MBBS; Ben Barkham, MBBS; Emily Tsang; Priyanshu Saha, MBBS, BS; Zion Hwang, MBBS, BS; Bisola Ajayi, PA-R; Varinder Singh Alg, MBBS; Ursalan Khan, MBBS; Mohamed Abdalla, MBBS; Shahnawaz Haleem, MBBS; Tesfaldet Kurban; Jason Bernard, MD, FRCS; Tim Bishop, FRCS; Darren F. Lui, FRCS
- 10:52 - 10:57 Paper #11: Greater than 70% of LIV Selection is at L3 or Below in Early Onset Scoliosis. Is There Any Role for a More Selective Approach?
Michael J. Heffernan, MD; Claudia Leonardi, PhD; Lindsay M. Andras, MD; Bailli Fontenot, BS; G.Ying Li, MD; Luke C. Drake, MD; Joshua M. Pahys, MD; John T. Smith, MD; Peter F. Sturm, MD; Michael P. Goltzbecker, MD; Benjamin D. Royce, MPH; Pediatric Spine Study Group
- 10:57 - 11:02 Paper #12: Does a dedicated a "Scoliosis Team" and Surgical Standardization Improve Outcomes in Adolescent Idiopathic Scoliosis Surgery and is it Reproducible?
Vishal Sarwahi, MD; Sayyida Hasan, BS; Keshin Visahan, BS; Yungtai Lo, PhD; Terry D. Amaral, MD; Jon-Paul P. DiMauro, MD
- 11:02 - 11:11 Discussion
- 11:11 - 11:16 Paper #13: Effects on Clinical Outcomes and Analysis on Culture Positive Patients who Underwent Primary Lumbar Fusion
Philip K. Paschal, MS; Gregory K. Paschal, MS; Celeste Abjornson, PhD; Andrew A. Sama, MD; Federico P. Girardi, MD; Darren R. Lebl, MD; Frank P. Cammisa Jr, MD
- 11:16 - 11:21 Paper #14: Trends and Rates of Reporting of Gender, Race, Ethnicity, and Other Socioeconomic Determinants of Health in Spine Surgery Randomized Clinical Trials
Eric Solomon, BS; Mihir Gupta, MD; Rachel Bronheim, MD; Rachel Su, BA; Nolan Reinhart, BS; Aditya Mittal, BS; Valentina Battistoni, BS; Miguel Cartagena Reyes, BS; Juan Silva Aponte, BS; Hamid Hasanzadeh, MD
- 11:21 - 11:30 Paper #15: Cost-Effectiveness Analysis of Weight-Loss Programs Use in Obese Patients Undergoing Spinal Deformity Surgery
Juan Silva Aponte, BS; Miguel Cartagena Reyes, BS; Micheal Raad, MD; Amit Jain, MD
- 11:30 - 11:33 Discussion

*Non-CME Sessions

SCIENTIFIC PROGRAM

Topics and faculty are preliminary and subject to change.

THURSDAY, MARCH 23, 2023

- 11:33 - 11:36 Preview of 58th Annual Meeting | Seattle, Washington, USA
Rajiv K. Sethi, MD
- 11:36 - 11:39 Preview of 31st IMAST | San Diego, California, USA
Eric O. Klineberg, MD & Per Trobisch, MD
- 11:39 - 11:43 Introduction of the President
Marinus de Kleuver, MD, PhD
- 11:43 - 12:00 Keynote Address
Serena S. Hu, MD

12:00 - 12:15

Exhibit Viewing & Lunch Pick-Up*

12:15 - 13:15

Industry Workshops*

13:15 - 13:45

Exhibit Viewing*

13:45 - 15:15

Concurrent Sessions 2A-B | Education Sessions

Session 2A: Culture of Innovation in Spine Surgery: Ideas, Execution & Adoption

Moderators: Ahmet Alanay, MD, Neel Anand, MD, & Calgar Yilgor, MD

- 13:45 - 13:54 Design Thinking and Innovation in Surgery: How to Navigate at Inflection Points
Christopher P. Ames, MD
- 13:54 - 14:00 Discussion
- 14:00 - 14:09 A Framework for our Disclosures: Principles of Industry Partnership
Peter O. Newton, MD
- 14:09 - 14:15 Discussion
- 14:15 - 14:24 Moving Research into Practice: Diffusion Patterns vs Evidence Development
Calgar Yilgor, MD
- 14:24 - 14:30 Discussion
- 14:30 - 14:39 New Technology Adoption: Considerations and Implementation Strategies
Michelle C. Welborn, MD
- 14:39 - 14:45 Discussion
- 14:45 - 14:54 Can We Preserve Patient Safety and Trust without Stifling Innovation?
Suken A. Shah, MD
- 14:54 - 15:00 Discussion
- 15:00 - 15:15 Panel Interactive Discussion

**Non-CME Sessions*

SCIENTIFIC PROGRAM

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THURSDAY, MARCH 23, 2023

Session 2B: Patient-Specific Approaches and Implants in Spine Surgery: 2023 vs 2023

Moderators: *Rajiv K. Sethi, MD, & Eric O. Klineberg, MD*

- 13:45 - 13:50 Personalized Spine Care: Is it Here to Stay? What are the Main Considerations?
Rajiv K. Sethi, MD
- 13:50 - 14:00 Pre-Bent Anatomical Rods: A Demonstration & Pro/Con Discussion
Christopher J. Kleck, MD & Brian Hsu, MD
- 14:00 - 14:05 AI Algorithms in Support of Surgical Decisionmaking: Has AI Become Better Than Us?
Ferran Pellisé, MD, PhD
- 14:05 - 14:10 Patient-Specific Navigation in Spine Surgery: An Update on Robotics, Computer Assisted Surgery, and 3D Printed Technology
Jesse Shen, MD, PhD
- 14:10 - 14:15 Q & A
- 14:15 - 14:30 Global Perspectives Panel: Conundrums and Barriers to Adding New Patient-Specific Technology
Brian Hsu, MD, MD, Eric O. Klineberg, MD, & Ferran Pellisé, MD, PhD, Gabriel Liu, FRCS(Orth), MSC
- 14:30 - 14:35 Augmented Reality: Is it Here Yet and How Will it Help Personalize Care?
Han Jo Kim, MD
- 14:35 - 14:40 Patient Genomics and Outcomes: Is the Future Now?
Christopher P. Ames, MD
- 14:40 - 14:45 Patient-Specific Preoperative Optimization: Let's Not Forget Mental Health
Venu M. Nemani, MD, PhD
- 14:45 - 14:50 Preoperative Optimization: Why don't we practice before the Big Show?
Han Jo Kim, MD
- 14:50 - 15:00 Q & A
- 15:00 - 15:15 Panel: Neurosurgical vs. Orthopaedic Acceptance of New Patient Specific Technology
Han Jo Kim, MD, Tyler Koski, MD, & Rajiv K. Sethi, MD

15:15 - 15:45

Refreshment Break & Exhibit Viewing*

15:45 - 16:55

Concurrent Sessions 3A-B | Abstract Sessions

Session 3A: Miscellaneous (Tumor, Infection, Non-op, Other)

Moderators: *Christopher P. Ames, MD & Rajiv K. Sethi, MD*

- 15:45 - 15:49 Paper #16: Validation of traditional prognosis scoring systems and SORG nomogram for predicting survival of spinal metastasis patients undergoing surgery
Pongsthorn Chanplakorn, MD; Chanthong Budsayavilaimas, MD; Pilan Jaipanya, MD; Chaiwat Kriwat-tanapong, MD; Gun Keorochana, MD; Pittavat Leelapattana, MD; Thamrong Lertudomphonwanit, MD
- 15:49 - 15:53 Paper #17: Survivorship Prediction in Spinal Oncology Patients by Oncologists is reliable: Data from a quaternary Metastatic Spinal Cord Compression MDT
Hassam Ahmed, BS; Kofi Cox, BS; Priyanshu Saha, MBBS, BS; Zion Hwang, MBBS, BS; Emily Tsang; Mehran Afshar, MBBS; Wing-Kin Liu, MBBS; Erlick Pereira, MBBS; Thamer Hamdan, MBBS; Bisola Ajayi, PA-R; Tesfaldet Kurban; Mohamed Abdalla, MBBS; Varinder Singh Alg, MBBS; Ursalan Khan, MBBS; Tim Bishop, FRCS; Jason Bernard, MD, FRCS; Darren F. Lui, FRCS

*Non-CME Sessions

SCIENTIFIC PROGRAM

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THURSDAY, MARCH 23, 2023

- 15:53 - 15:57 Paper #18: Can the SORG Machine Learning Algorithms Predict Rural Cohort Spinal Metastatic Disease Survival?
James Hall, MD; Michael Garneau, BS; Trevor Gulbrandsen, MD; Alex Coffman, BS; Cassim Igram, MD; Andrew Pugely, MD; Catherine Olinger, MD; Joseph Schwab, MD
- 15:57 - 16:08 Discussion
- 16:08 - 16:12 TBA
- 16:12 - 16:16 Paper #20: Experience of Spinal Oligometastatic Disease at a Quaternary Level 1 Spine Centre
Priyanshu Saha, MBBS, BS; Emily Tsang; Zion Hwang, MBBS, BS; Bisola Ajayi, PA-R; Tesfaldet Kurban; Mohamed Abdalla, MBBS; Varinder Singh Alg, MBBS; Ursalan Khan, MBBS; Shahnawaz Haleem, MBBS; Jason Bernard, MD, FRCS; Tim Bishop, FRCS; Darren F. Lui, FRCS
- 16:16 - 16:20 Paper #21: Pedagogy in Spine Surgery: Developing a Free and Open-access Virtual Simulator for Lumbar Pedicle Screws Placement.
Léonard Chatelain, MD; Marc Khalifeé, MD, MS; Guillaume Riouallon, MD; Pierre Guigui, MD; Emmanuelle Ferrero, MD, PhD
- 16:20 - 16:31 Discussion
- 16:31 - 16:35 Paper #22: Clinical and Radiological Outcomes Between Anterior Lumbar Interbody Fusion with Percutaneous Pedicle Screw Fixation and Transforaminal Lumbar Interbody Fusion in the Treatment of High-Grade Isthmic Spondylolisthesis
Daniel Coban, MD; Stuart Changoor, MD; Conor J. Dunn, MD; Neil Patel, MD; Kumar Sinha, MD; Ki S. Hwang, MD; Michael J. Faloon, MD; Arash Emami, MD
- 16:35 - 16:39 Paper #23: Women in Spine Surgery
Kathryn Jurenovich, DO; Lisa Cannada, MD; Melissa Erickson, MD; Hania Shahzad, MBBS; Nazihah S. Bhatti, BS; Elizabeth Yu, MD
- 16:39 - 16:43 Paper #24: Assessing the Effects of Prehabilitation Protocols on Post-Operative Outcomes in Adult Cervical Deformity Surgery: Does Early Optimization Lead to Optimal Clinical Outcomes?
Peter Tretiakov, BS; Bailey Imbo, BA; Kimberly McFarland, BS; Pooja Dave, BS; Rachel Joujon-Roche, BS; Tyler K. Williamson, MS, BS; Jamshaid Mir, MD; Stephane Owusu-Sarpong, MD; Bassel G. Diebo, MD; Shaleen Vira, MD; Peter G. Passias, MD
- 16:43 - 16:55 Discussion

Session 3B: Cervical Spine, Kyphosis and Lumbar Degenerative

Moderators: *Praveen V. Mummaneni, MD, MBA & Tyler Koski, MD*

- 15:45 - 15:49 Paper #25: Can Baseline Disability Limit Clinical Improvement After Surgical Correction of Cervical Deformity?
Peter G. Passias, MD; Rachel Joujon-Roche, BS; Pooja Dave, BS; Peter Tretiakov, BS; Kimberly McFarland, BS; Jamshaid Mir, MD; Stephane Owusu-Sarpong, MD; Jordan Lebovic, MBA
- 15:49 - 15:53 Paper #26: Addressing Thoracic Secondary Drivers at the Onset of Corrective Realignment Surgery for Adult Cervical Deformities Allows for Maintained Alignment and Clinical Gains at Two Years
Peter G. Passias, MD; Peter Tretiakov, BS; Bailey Imbo, BA; Rachel Joujon-Roche, BS; Tyler K. Williamson, MS, BS; Pooja Dave, BS; Kimberly McFarland, BS; Jamshaid Mir, MD; Tomi Lanre-Amos, MD; Bassel G. Diebo, MD; Shaleen Vira, MD

*Non-CME Sessions

SCIENTIFIC PROGRAM

Topics and faculty are preliminary and subject to change.

THURSDAY, MARCH 23, 2023

- 15:53 - 15:57 Paper #27: Cervical Laminoplasty Versus Laminectomy and Posterior Spinal Fusion for Cervical Myelopathy: Propensity Matched Analysis of 24-Month Outcomes from the Quality Outcomes Database
Andrew K. Chan, MD; Christopher I. Shaffrey, MD; Christine Park, BA; Oren Gottfried, MD; Erica F. Bisson, MPH; Mohamad Bydon, MD; Anthony L. Asher, MD; Domagoj Coric, MD; Eric A. Potts, MD; Kevin T. Foley, MD; Michael Y. Wang, MD; Kai-Ming G. Fu, MD, PhD; Michael S. Virk, MD, PhD; John J. Knightly, MD; Scott Meyer, MD; Paul Park, MD; Cheerag D. Upadhyaya, MSc; Mark E. Shaffrey, MD; Luis M. Tumi-alán, MD; Jay D. Turner, MD; Giorgos Michalopoulos, MD; Brandon Sherrod, MD; Nitin Agarwal, MD; Dean Chou, MD; Regis W. Haid Jr., MD; Praveen V. Mummaneni, MBA
- 15:57 - 16:08 Discussion
- 16:08 - 16:12 Paper #28: The Impact of C3 Laminectomy on Cervical Sagittal Alignment in Cervical Laminoplasty: A Prospective, Randomized Controlled Trial Comparing Clinical and Radiological Outcomes between C3 Laminectomy with C4-C6 Laminoplasty and C3-C6 Laminoplasty
Jun-Hoe Kim, MD; Junghoon Han, MD; Taeshin Kim, MD; Chang-Hyun Lee, MD, MS; Chi Heon Kim, MD, PhD; Chun Kee Chung, MD, PhD
- 16:12 - 16:16 Paper #29: Proposal for a Treatment-oriented Classification System for Congenital Kyphosis in Children
Ziming Yao, PhD; Xue Jun Zhang, MD
- 16:16 - 16:20 Paper #30: Severe Kyphoscoliosis Patients with MRI Type III Spinal Cord at Apex: Does Preoperative Traction Improve Surgical Safety?
Wanyou Liu, MS; Benlong Shi, MD, PhD; Zhen Liu, PhD; Xu Sun, MD; Zezhang Zhu, PhD; Yong Qiu, PhD
- 16:20 - 16:31 Discussion
- 16:31 - 16:35 Paper #31: Nutrient Delivery by Controlled-release Microparticles Improves Autograft Performance in Rat Posterolateral Lumbar Spinal Fusion
Ting Cong, MD; Kyle W. Morse, MD; Janice Havasy, MD; Max Korsun, BS; Alexander Koo, BA; Sheeraz Qureshi, MD; Matthew E. Cunningham, MD, PhD
- 16:35 - 16:39 Paper #32: Use of Dexamethasone in the Immediate Post-operative Period is Associated with Increased Risk of Instrumentation and Surgical Site Complications in Diabetic Patients Undergoing Lumbar Spinal Fusion
Douglass Johnson, MD; Brian McCormick, MD; Joseph Ferguson, MD; Bryan W. Cunningham, PhD; Paul C. McAfee, MBA
- 16:39 - 16:43 Paper #33: Effect of Systemic Teriparatide (PTH1-34) versus Placebo on Bone Mineral Density (BMD) after Lumbar Spinal Arthrodesis: A Secondary Analysis of a Randomized Clinical Trial
Astrid H. Gimbel, BS; Mikkel î Andersen, MD; Pernille Hermann, MD, PhD; Annette Bennedsgaard Jespersen, MD, PhD; Leah Y. Carreon, MD, MS
- 16:43 - 16:55 Discussion

16:55 - 17:15

Exhibit Viewing*

17:15 - 18:45

Session 4: 30 Years of Innovation: What Stuck and What Didn't?

Moderators: *Stefan Parent, MD, PhD & Ahmet Alanay, MD*

17:15 - 17:20 Introduction
Stefan Parent, MD, PhD

17:20 - 17:30 Clinical Outcomes of Posterior VCR for Severe Deformity; What and for What Indications Should This Procedure be Reserved?
Lawrence G. Lenke, MD

*Non-CME Sessions

SCIENTIFIC PROGRAM

Topics and faculty are preliminary and subject to change.

THURSDAY, MARCH 23, 2023

17:30 - 17:34	Discussion
17:34 - 17:44	Five-year Clinical Results of Cervical Total Disc Replacement Compared with Anterior Discectomy and Fusion <i>Todd J. Albert, MD</i>
17:44 - 17:48	Discussion
17:48 - 17:58	Outcomes of a Randomized Clinical Trial in Adults with Symptomatic Lumbar Scoliosis (ASLS); Should We Offer Surgical Treatment to Symptomatic Adults with Lumbar Scoliosis? <i>Justin Smith, MD, PhD</i>
17:58 - 18:02	Discussion
18:02 - 18:12	Use of MIS in Posterior Fusion for AIS- What Made Me Move Away From This Procedure? <i>Firoz Miyanji, MD</i>
18:12 - 18:16	Discussion
18:16 - 18:26	Sacro-Iliac Joint Fusions- Current Indications and Clinical Outcomes <i>Robert K. Eastlack, MD</i>
18:26 - 18:30	Discussion
18:30 - 18:40	Anterior vs. Posterior Approaches to the Spine: Is the Anterior Approach Finally Making a Come-back with VBT? <i>Randal R. Betz, MD</i>
18:40 - 18:44	Discussion
18:44 - 18:45	Conclusion/Final Words <i>Stefan Parent, MD, PhD</i>

**Non-CME Sessions*

SCIENTIFIC PROGRAM

Topics and faculty are preliminary and subject to change.

FRIDAY, MARCH 24, 2023

07:00 - 17:00

Registration Open

07:30 - 08:30

Industry Workshops*

08:30 - 16:00

Exhibit Hall Open

08:30 - 09:00

Refreshment Break & Exhibit Viewing*

09:00 - 11:00

Concurrent Sessions 5A-B | Abstract Sessions

Session 5A: AIS, Motion Preservation, Innovative Methods and Neuromuscular

Moderators: Ferran Pellise, MD, PhD & Justin S. Smith, MD, PhD

- 09:00 - 09:04 Paper #34: Adolescent Idiopathic Scoliosis (AIS) Surgery: Comparison between Adolescence and Adulthood in a Cohort of 495 Patients
Emmanuelle Ferrero, MD, PhD; Marc Khalifeé, MD, MS; Pierre Guigui, MD
- 09:04 - 09:08 Paper #35: Single-Stage Implant Exchange Provides Less Correction Loss with Better Patient-Reported Outcomes than Implant Removal Only Following Late Infections after Posterior Spinal Fusion for AIS
Gregory Benes, BS; Harry L. Shufflebarger, MD; Suken A. Shah, MD; Burt Yaszay, MD; Michelle Claire Marks, PT, MA; Peter O. Newton, MD; Paul D. Sponseller, MD, MBA
- 09:08 - 09:12 Paper #36: Anterior vs Posterior Spinal Fusion in Lenke Type 5 AIS Curves: Comparison of Health Related Quality of Life, Radiologic Outcomes and Assessment of the Degeneration of Unfused Segments (MRI Study) - Mean 13 Years Follow up
Hamisi M. Mraja, MD; Baris Peker, MD; Halil Gok, MD; Celaledin Bildik, MD; Ayhan Mutlu, MD; Onur Levent Ulusoy, MD; Tunay Sanli, MA; Selhan Karadereler, MD; Meric Enercan, MD; Azmi Hamzaoglu, MD
- 09:12 - 09:24 Discussion
- 09:24 - 09:28 Paper #37: Vertebral Body Tethering in Lenke 5 and 6 AIS: Radiographic Outcomes in Selective Vs. Non-Selective VBT
Noor Maza, MD; Lily Q. Eaker, BA; Baron S. Lonner, MD
- 09:28 - 09:32 Paper #38: Unilateral Thoracic Spinal Nerve Resection Causes Idiopathic-Like Thoracic Scoliosis in an Immature Porcine Model
Hong Zhang, MD; Daniel J. Sucato, MD, MS
- 09:32 - 09:36 Paper #39: Assessment of Cessation of Growth in Idiopathic Scoliosis: Radiographic Measures, Biologic Measures and More
Michelle C. Welborn, MD; Amer F. Samdani, MD; James O. Sanders, MD; Vishwas R. Talwalkar, MD; Robert H. Cho, MD; Selina C. Poon, MD; Ryan Coghlan, MS; Joseph D. Stone, MD; Susan Sienko, PhD
- 09:36 - 09:48 Discussion
- 09:48 - 09:52 Paper #40: Do 3D Printed Templates Improve the Accuracy and Safety of Pedicle Screw Insertion in Complex Spinal Kypho-scoliotic Deformities? A Comparative Cohort Study
Sharan T. Achar, MS; Umesh P. Kanade, MS; Harith B. Reddy, MS; Vigneshwara M. Badikillaya, MD; Sajjan K. Hegde, MD

*Non-CME Sessions

SCIENTIFIC PROGRAM

Topics and faculty are preliminary and subject to change.

FRIDAY, MARCH 24, 2023

- 09:52 - 09:56 Paper #41: O-Arm Navigated versus Free Hand Pedicle Screw Placement in Lumbar Spine: An RCT- Advancement or a Mirage of an Edge over Convention?
Bhavuk Garg, MS; Nishank Mehta, MS; Shubhankar Shekhar, MBBS; Shrijith MB, MD; Tungish Bansal, MS; Namith Rangaswamy, MS
- 09:56 - 10:00 Paper #42: Osteotomized Debridement Versus Curretted Debridement in Posterior Approach in Treating Thoracolumbar Tuberculosis
Shengbiao Ma, MD; Zhenhai Zhou, MD, PhD; Zongmiao Wan, MD, PhD; Pingguo Duan, MD; Wenqiang Deng, MBBS; Jiang Xu, MD; Chunyang Wu, MD; Kai Cao, MD, PhD
- 10:00 - 10:12 Discussion
- 10:12 - 10:16 Paper #43: Mortality in Cerebral Palsy Patients with Scoliosis With and Without Spinal Deformity Surgery - A Registry-based Investigation
Matti Ahonen, MD, PhD; Ilkka J. Helenius, MD, PhD; Mika Gissler, PhD; Ira Jeglinsky-Kankainen, PhD
- 10:16 - 10:20 Paper #44: Mid-term Outcome of Multimodal Treatment for Severe Spinal Deformity in Osteogenesis Imperfecta: Minimum Two Years Follow-up
Yusuke Hori, MD, PhD; Tyler C. McDonald, MD; Kenneth J. Rogers, PhD; Petya Yorgova; Irene Li, MS; Michael Bober, MD; Richard Kruse, MD; Jeanne M. Franzone, MD; Suken A. Shah, MD
- 10:20 - 10:24 Paper #45: Why are we Fixing the Spine? Surgeon and Caregiver Answers on the Goals of Surgery for Patients with CP Scoliosis
Ali Asma, MD; Armagan C. Ulusaloglu, MD; Petya Yorgova; Irene Li, MS; Patrick J. Cahill, MD; Keith Baldwin, MD, MPH, MSPT; Paul D. Sponseller, MD, MBA; Burt Yaszay, MD; M. Wade Shrader, MD; Harms Study Group; Suken A. Shah, MD
- 10:24 - 10:36 Discussion
- 10:36 - 10:40 Paper #46: Minimally Invasive Surgery in Patients with Adolescent Idiopathic Scoliosis is Safer, Less Expensive with Better Restoration of Kyphosis
Vishal Sarwahi, MD; Sayyida Hasan, BS; Jesse M. Galina, BS; Aaron M. Atlas, BS; Alexandre Ansorge, MD; Charlotte De Bodman, MD; Yungtai Lo, PhD; Terry D. Amaral, MD; Romain Dayer, MD
- 10:40 - 10:44 Paper #47: The Learning Curve of Minimally Invasive Surgery (MIS) in Adolescent Idiopathic Scoliosis (AIS)
Vishal Sarwahi, MD; Sayyida Hasan, BS; Keshin Visahan, BS; Alexandre Ansorge, MD; Charlotte De Bodman, MD; Yungtai Lo, PhD; Terry D. Amaral, MD; Romain Dayer, MD
- 10:44 - 10:48 Paper #48: Which is Better: Percutaneous or Open Robot-Assisted Spine Surgery? Prospective, Multicenter Study of 2,524 Screws in 336 patients
Nathan J. Lee, MD; Lindsay Orosz, MS, PA-C; Christopher R. Good, MD; Greg Poulter, MD; Ehsan Jazini, MD; Colin Haines, MD; Jeffrey L. Gum, MD; Ronald A. Lehman, MD
- 10:48 - 11:00 Discussion

*Non-CME Sessions

SCIENTIFIC PROGRAM

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FRIDAY, MARCH 24, 2023

Session 5B: Adult Spinal Deformity and Quality, Safety, Value, Complications

Moderators: Praveen V. Mummaneni, MD & Tyler Koski, MD

- 09:00 - 09:04 Paper #49: A Parameter Fixed to Poor Outcomes?: A Detailed Analysis of High Pelvic Incidence in Adult Spinal Deformity Surgery
Peter G. Passias, MD; Bailey Imbo, BA; Jamshaid Mir, MD; Kimberly McFarland, BS; Peter Tretiakov, BS; Pooja Dave, BS; Rachel Joujon-Roche, BS; Stephane Owusu-Sarpong, MD; Tyler K. Williamson, MS, BS; Jordan Lebovic, MBA; Bassel G. Diebo, MD; Shaleen Vira, MD; Renaud Lafage, MS; Virginie Lafage, PhD; Justin S. Smith, MD, PhD
- 09:04 - 09:08 Paper #50: Maintenance of Pelvic Tilt Normalization following Adult Spinal Deformity Corrective Surgery: Analysis of Prevalence, Timing, and Predictors influencing Occurrence
Peter G. Passias, MD; Pooja Dave, BS; Peter Tretiakov, BS; Jamshaid Mir, MD; Kimberly McFarland, BS; Stephane Owusu-Sarpong, MD; Jordan Lebovic, MBA; Andrew J. Schoenfeld, MD
- 09:08 - 09:12 Paper #51: What's Next: A Hierarchical Order to Surgical Planning for Age-Adjusted Correction of Adult Spinal Deformity
Peter G. Passias, MD; Tyler K. Williamson, MS, BS; Stephane Owusu-Sarpong, MD; Rachel Joujon-Roche, BS; Pooja Dave, BS; Peter Tretiakov, BS; Bailey Imbo, BA; Jamshaid Mir, MD; Kimberly McFarland, BS; Jordan Lebovic, MBA; Shaleen Vira, MD; Bassel G. Diebo, MD; Renaud Lafage, MS; Virginie Lafage, PhD
- 09:12 - 09:24 Discussion
- 09:24 - 09:28 Paper #52: Adult Spinal Deformity Surgery Associated with Thromboembolic Disease: An Analysis of Over 8,500 Spinal Deformity Patients
Daniel O. Gallagher, BS; Takashi Hirase, MD; Kevin Bondar, MD; Jacob Harris, BS; Philip K. Louie, MD; Arya G. Varthi, MD; Comron Saifi, MD
- 09:28 - 09:32 Paper #53: Failure of Nonoperative Care in Adult Symptomatic Lumbar Scoliosis: Incidence, Timing, and Risk Factors for Conversion from Nonoperative to Operative Treatment
John C. Clohisey, MD; Michael P. Kelly, MD; Elizabeth L. Yanik, PhD; Vy Pham, MD; Justin S. Smith, MD, PhD; Han Jo Kim, MD; Shay Bess, MD; Christopher I. Shaffrey, MD; Christine Baldus, RN; Keith H. Bridwell, MD
- 09:32 - 09:36 Paper #54: An Analysis of the Capabilities and Utilization of Artificial Intelligence in Adult Spinal Deformity Surgery
Peter G. Passias, MD; Bailey Imbo, BA; Kimberly McFarland, BS; Pooja Dave, BS; Jamshaid Mir, MD; Peter Tretiakov, BS; Tyler K. Williamson, MS, BS; Rachel Joujon-Roche, BS; Lara Passfall, BS; Oscar Krol, BS; Bassel G. Diebo, MD; Shaleen Vira, MD; Renaud Lafage, MS; Virginie Lafage, PhD; Alan H. Daniels, MD; Andrew J. Schoenfeld, MD; Stephane Owusu-Sarpong, MD; Jordan Lebovic, MBA; Justin S. Smith, MD, PhD
- 09:36 - 09:48 Discussion
- 09:48 - 09:52 Paper #55: Persistent Lower Extremity Compensation for Sagittal Imbalance Following Surgical Correction of Complex Adult Spinal Deformity: A Radiographic Analysis of Early Impact
Tyler K. Williamson, MS, BS; Peter G. Passias, MD; Justin S. Smith, MD, PhD; Renaud Lafage, MS; Breton G. Line, BS; Rachel Joujon-Roche, BS; Peter Tretiakov, BS; Oscar Krol, BS; Bassel G. Diebo, MD; Alan H. Daniels, MD; Jeffrey L. Gum, MD; Themistocles S. Protopsaltis, MD; D. Kojo Hamilton, FAANS; Alex Sorocceanu, MPH; Justin K. Scheer, MD; Robert K. Eastlack, MD; Gregory M. Mundis Jr., MD; Michael P. Kelly, MD; Pierce D. Nunley, MD; Eric O. Klineberg, MD; Han Jo Kim, MD; Khaled M. Kebaish, MD; Stephen J. Lewis, MD, FRCS(C); Richard Hostin, MD; Munish C. Gupta, MD; Lawrence G. Lenke, MD; Christopher P. Ames, MD; Douglas C. Burton, MD; Christopher I. Shaffrey, MD; Virginie Lafage, PhD; Frank J. Schwab, MD; Shay Bess, MD; International Spine Study
- 09:52 - 09:56 Paper #56: Adherence to the Obeid-Coronal Malalignment (O-CM) Classification Algorithm Improves Surgical Outcomes and Decreases Mechanical Complications at 2-years
Ibrahim Obeid, MD

*Non-CME Sessions

SCIENTIFIC PROGRAM

Topics and faculty are preliminary and subject to change.

FRIDAY, MARCH 24, 2023

- 09:56 - 10:00 Paper #57: The Cranial Sagittal Vertical Axis to the Hip (CrSVA-H) is the Best Sagittal Alignment Predictor of Patient Reported Outcomes at 2 Years Postoperative in Adult Spinal Deformity Surgery
Christopher Lai, BS; Sarthak Mohanty, BS; Fthimnir Hassan, MPH; Caroline Taber, BS; Jaques Williams, MD; Nathan J. Lee, MD; Zeeshan M. Sardar, MD; Ronald A. Lehman, MD; Lawrence G. Lenke, MD
- 10:00 - 10:12 Discussion
- 10:12 - 10:16 Paper #58: Impact of Smoking Status on Early and Late Outcomes after Adult Spinal Deformity Surgery
Tina Raman, MD
- 10:16 - 10:20 Paper #59: Factors Associated with Sagittal Malalignment Reoccurrence after Pedicle Subtraction Osteotomy
Tina Raman, MD
- 10:20 - 10:24 Paper #60: Propensity Score Matched (PSM) Study Comparing Patient Reported (PROs) and Clinical Outcomes Among Patients who Achieved PI-LL(PILL)<10 versus PI-LL>10
Sarthak Mohanty, BS; Christopher Lai, BS; Fthimnir Hassan, MPH; Ronald A. Lehman, MD; Lawrence G. Lenke, MD
- 10:24 - 10:36 Discussion
- 10:36 - 10:40 Paper #61: Frailty Stratification Using the Modified 5-item Frailty Index: Significant Variation within Frailty Patients in Elective Spine Surgery.
Gaston Camino-Willhuber, MD; Henryk Haffer, MD; Maximilian Muellner, MD; yusuke dodo, MD; Soji Tani, MD, PhD; Erika Chiapparelli, MD; Michele Sarin, MS; Jennifer Shue; Ellen M. Soffin, MD, PhD; William Zelenty, MD; Gbolabo Sokunbi, MD; Darren R. Lebl, MD; Federico P. Girardi, MD; Frank P. Cammi-sa Jr, MD; Alexander P. Hughes, MD; Andrew A. Sama, MD
- 10:40 - 10:44 Paper #62: PROMIS Anxiety and Sleep Scores are Associated with High Barriers to Proper Opioid Use After Adult Spinal Deformity
Kevin C. Mo, BS; Oscar Covarrubius, BS; Arjun Gupta, BS; Christa LiBrizzi, MD; Farah Musharbash, MD; Micheal Raad, MD; Lee Riley, MD; Khaled M. Kebaish, MD; Brian J. Neuman, MD
- 10:44 - 10:48 Paper #63: A Multidisciplinary Approach Does not Discriminate Based on Socioeconomic Factors for Patients with Adult Spinal Deformity
Caroline E. Drolet, PhD; Jesse Shen, MD, PhD; Venu M. Nemani, MD, PhD; Comron Saifi, MD; Jean-Christophe A. Leveque, MD; Rajiv K. Sethi, MD; Philip K. Louie, MD
- 10:48 - 11:00 Discussion

11:00 - 11:30

Exhibit Viewing & Lunch Pick-Up (11:15)*

11:30 - 12:30

Industry Workshops*

12:30 - 12:45

Exhibit Viewing*

12:45 - 14:15

Concurrent Sessions 6A-B | Education Sessions

Session 6A: Non-Fusion Surgical Treatment for AIS: Expanding the Portfolio

Moderator: *Per D. Trobisch, MD*

12:45 - 12:48 Introduction from Chair
Per D. Trobisch, MD

*Non-CME Sessions

SCIENTIFIC PROGRAM

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FRIDAY, MARCH 24, 2023

12:48 - 12:58	What are the Optimal Indications for Growth Modulation to Work? <i>Michelle C. Welborn, MD</i>
12:58 - 13:08	Still Pushing The Limits, Or Normal Evolution of a New Technique? <i>Baron S. Lonner, MD</i>
13:08 - 13:18	The Optimal Indications Based on My Clinical Practice – Lessons Learned From 10 Years of Performing VBT? <i>Hee-Kit Wong, FRCS</i>
13:18 - 13:30	Discussion
13:30 - 13:40	Self-Distracting Posterior-Based Devices; Indications, Early Results, and Pearls <i>Ron El-Hawary, MD</i>
13:40 - 13:50	Selective PSF and Lumbar VBT? What are the Early Clinical Outcomes? <i>Firoz Miyanji, MD</i>
13:50 - 14:00	Revision Strategies Following VBT <i>Per D. Trobisch, MD</i>
14:00 - 14:12	Discussion
14:12 - 14:15	Final Words from Chair <i>Michelle C. Welborn, MD</i>

Session 6B: Patient-Focused MIS

Moderators: Peter G. Passias, MD, Robert K. Eastlack, MD, Corey T. Walker, MD & Michael J. Faloony, MD

12:45 - 12:54	Using An Algorithmic Approach to Tackle Minimally Invasive Deformity Operations <i>Praveen V. Mummaneni, MD, MBA</i>
12:54 - 13:03	MIS Deformity Home Runs and Strikeouts <i>Robert K. Eastlack, MD</i>
13:03 - 13:08	Discussion
13:08 - 13:17	Identification of the Ideal Candidate for Prone Lateral Single-Position Circumferential Fusion <i>Juan S. Uribe, MD</i>
13:17 - 13:26	Should Spine Normative Shape/Lordosis Distribution Goals Influence the Choice of Single-Position MIS Approach? <i>Ferran Pellisé, MD, PhD</i>
13:26 - 13:35	But What About the Long-Term Complications? Will we see more PJK, Rod Fractures, and/or Mechanical Complications? <i>Elizabeth L. Lord, MD</i>
13:35 - 13:40	Discussion
13:40 - 13:43	Case Presentation Debate: Severe Coronal Plane Imbalance (Type C Curve With Coronal Shift) <i>Corey T. Walker, MD</i>
13:43 - 13:52	Debater 1: MIS Gets It Done <i>Neel Anand, MD</i>
13:52 - 14:01	Debater 2: Open Gets It Done <i>Gregory M. Mundis Jr., MD</i>
14:01 - 14:15	Discussion

**Non-CME Sessions*

SCIENTIFIC PROGRAM

Topics and faculty are preliminary and subject to change.

FRIDAY, MARCH 24, 2023

14:15 - 14:30

Exhibit Viewing*

14:30 - 15:30

Industry Workshops*

15:30 - 16:00

Exhibit Viewing & Refreshment Break*

16:00 - 17:35

Session 7: Expert Techniques

Moderator: Stefan Parent, MD, PhD

16:00 - 16:05 Presentation of the Whitecloud Award Winning Paper

16:05 - 16:10 Introduction
Stefan Parent, MD, PhD

16:10 - 16:20 How I Perform a VBT? Tips, Tricks, and Master Techniques
Amer F. Samdani, MD

16:20 - 16:25 Discussion

16:25 - 16:35 Cervico-Thoracic VCR
Christopher P. Ames, MD

16:35 - 16:40 Discussion

16:40 - 16:50 Cervical Pedicle Screws
Kota Watanabe, MD, PhD

16:50 - 16:55 Discussion

16:55 - 17:05 High-Grade Spondylolisthesis Reduction
Daniel J. Sucato, MD, MS

17:05 - 17:15 MIS Anterior Scoliosis Correction- Combined All Prone
Juan S. Uribe, MD

17:15 - 17:20 Discussion

17:20 - 17:35 Conclusion
Stefan Parent, MD, PhD

19:00 - 22:00

Innovation Celebration*

A reception offering food & beverages to celebrate the conclusion of sessions and lead attendees into Innovation Day on Saturday hosted by SRS Industry Supporters. The celebration will take place at *EPIC: The Irish Emigration Museum* and will offer all attendees an opportunity to connect with peers, reflect on the meeting, celebrate innovation and explore the museum. Open to all registered attendees and guests of registered attendees. Registration is required and tickets must be purchased in advance. Tickets are \$10 USD for registered attendees and guest tickets may be purchased for \$175 USD, per guest. A limited number of tickets may be available onsite; however, SRS urges delegates to purchase tickets at the time of registration. If you have already registered and would like to add the Innovation Celebration and/or purchase guest ticket(s), you may do so here: Add [IMAST23 Event Tickets](#).

SATURDAY, MARCH 25, 2023 **INNOVATION DAY***

Hosted by SRS Industry Partners. Please refer to the IMAST website for additional information.

*Non-CME Sessions

UPCOMING 2023 SRS COURSES



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EXHIBITORS

(as of December 2022)

SRS encourages IMAST delegates to visit the 2023 IMAST Exhibitors during exhibit viewing times and between sessions, the following companies will be represented.

EXHIBITOR VIEWING HOURS

Wednesday, March 22 18:00 – 20:00

Thursday, March 23 09:00 – 17:15

Friday, March 24 08:30 – 16:00

ATEC Spine

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Carlsbad, CA 92008 USA
www.atecspine.com

B. Braun Medical

Am Aesculap Platz
Tuttlingen, Germany 78532
www.bbraun.com

Carlsmed

1800 Aston Ave. Suite 100
Carlsbad, CA 92008 USA
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CoreLink Surgical

2072 Fenton Logistics Park
St. Louis, MO 53026 USA
www.corelinksurgical.com

DePuy Synthes

325 Paramount Drive
Raynham, MA 02767 USA
www.jnjmedtech.com/en-US

Globus Medical

2560 General Armistead
Audubon, PA 19403 USA
www.globusmedical.com

Medacta International SA

Strada Regina
Castel San Pietro, Switzerland 6874
www.medacta.com

Medtronic

1800 Pyramid Place
Memphis, TN 38732 USA
www.medtronic.com

NuVasive

7475 Lusk Blvd.
San Diego, CA 92121 USA
www.nuvasive.com

nView Medical

2681 E. Parley's Way, Suite 107
Salt Lake City, UT 84106 USA
www.nviewmed.com

Orthofix

3451 Plano Parkway
Lewisville, TX 75056 USA
www.orthofix.com

Pacira BioSciences, Inc

5 Sylvan Way, Suite 300
Parsippany, NJ 07054 USA
www.pacira.com

SI-BONE

471 Wl Camino Real
Santa Clara, CA 95050 USA
www.si-bone.com

Spineguard SA

10 Cowrs Louis Lumiere
Vincennes, France 94300
www.spineguard.com

Stryker

600 Hope Parkway
Leesburg, VA 20175 USA
www.stryker.com

ZimVie

10225 Westmoor Drive, Suite 100
Westminster, CO 80021 USA
www.zimvie.com

HANDS-ON WORKSHOPS

(as of December 2022)

IMAST delegates are encouraged to attend the Hands-On Workshops (HOW) on Thursday, March 23 and Friday, March 24. Morning, lunch and afternoon sessions will be offered.

Each workshop is programmed by a single- supporting company and will feature presentations on topics and technologies selected by the company. Please note: CME credits are not available for Hands-On Workshops.

Thursday, March 23, 2023	Friday, March 24, 2023
08:00 – 09:00 <i>(includes breakfast)</i>	07:30 – 08:30 <i>(includes breakfast)</i>
DePuy Synthes Globus Medical, Inc.	nView Medical
12:15 - 13:15 <i>(includes lunch)</i>	11:30 – 12:30 <i>(includes lunch)</i>
Globus Medical, Inc. Medtronic NuVasive ZimVie	DePuy Synthes Globus Medical, Inc. Pacira Stryker
	14:30 – 15:30 <i>(includes snacks & coffee)</i>
	ATEC Stryker

CORPORATE SUPPORTERS

We are pleased to acknowledge and thank those companies that provided financial support to SRS in 2022. Support levels are based on total contributions throughout the year and include the Annual Meeting, IMAST, Global Outreach Scholarships, Edgar Dawson Memorial Scholarships, SRS Traveling Fellowships, and the Research Education (REO) Fund.

DOUBLE DIAMOND

DePuy Synthes
Globus Medical*
Medtronic*
NuVasive*
Stryker*
ZimVie

GOLD

OrthoPediatrics

SILVER

ATEC Spine
Orthofix
Pacira BioSciences, Inc.

BRONZE

Arthrex
Augmedics
B. Braun Medical
Biedermann Motech

Carlsmed
Mainstay Medical
Medacta
Mighty Oak Medical

SeaSpine
Spinal Elements
Spineology
SI-BONE

** = ASLS II Supporter*



INTERNATIONAL MEETING
ON ADVANCED SPINE TECHNIQUES

San Diego, CA, USA

April 10-13, 2024

SAVE THE DATE



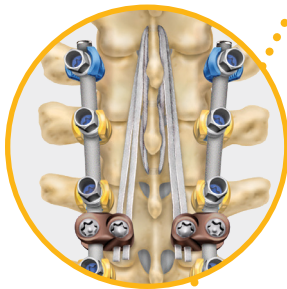
Medtronic

Leading the way in adult and pediatric patient-specific spine solutions

Medtronic
proudly
congratulates
SRS on its
30th IMAST



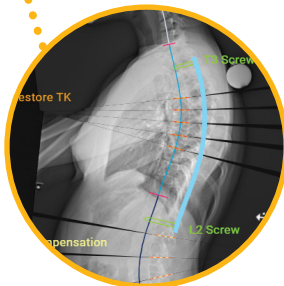
CD Horizon™ ModuLeX™ spinal system*, building on 40 years of proven CD Horizon™ technology.



LigaPASS™ 2.0 system† is designed to help achieve a well-balanced spine in both coronal and sagittal planes when screws, hooks, or wires cannot be placed and axial derotation and reduction are both desired.



Mazor™ robotic guidance platform is a **powerful surgical solution** featuring planning tools that enable 3-D construct design and robotic surgical execution for a seamless OR experience.



UNiD™ ASI is a longitudinal data collection platform that leverages artificial intelligence and patient specific implants to support planning, execution and analysis of alignment goals.

*CE mark pending approval.

† For US audiences: LigaPASS™ 2.0 ligament augmentation system is not CE marked and is not available in EU.

See the device manual for detailed information regarding the instructions for use, indications, contraindications, warnings, precautions, and potential adverse events. For further information, contact your local Medtronic representative and/or consult the Medtronic website at medtronic.eu. An electronic version of the package insert may be found at www.medtronic.com/manuals and www.medtronic.com/UNiD.

The commercial name of Mazor™ is Mazor X Stealth™ Edition.

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