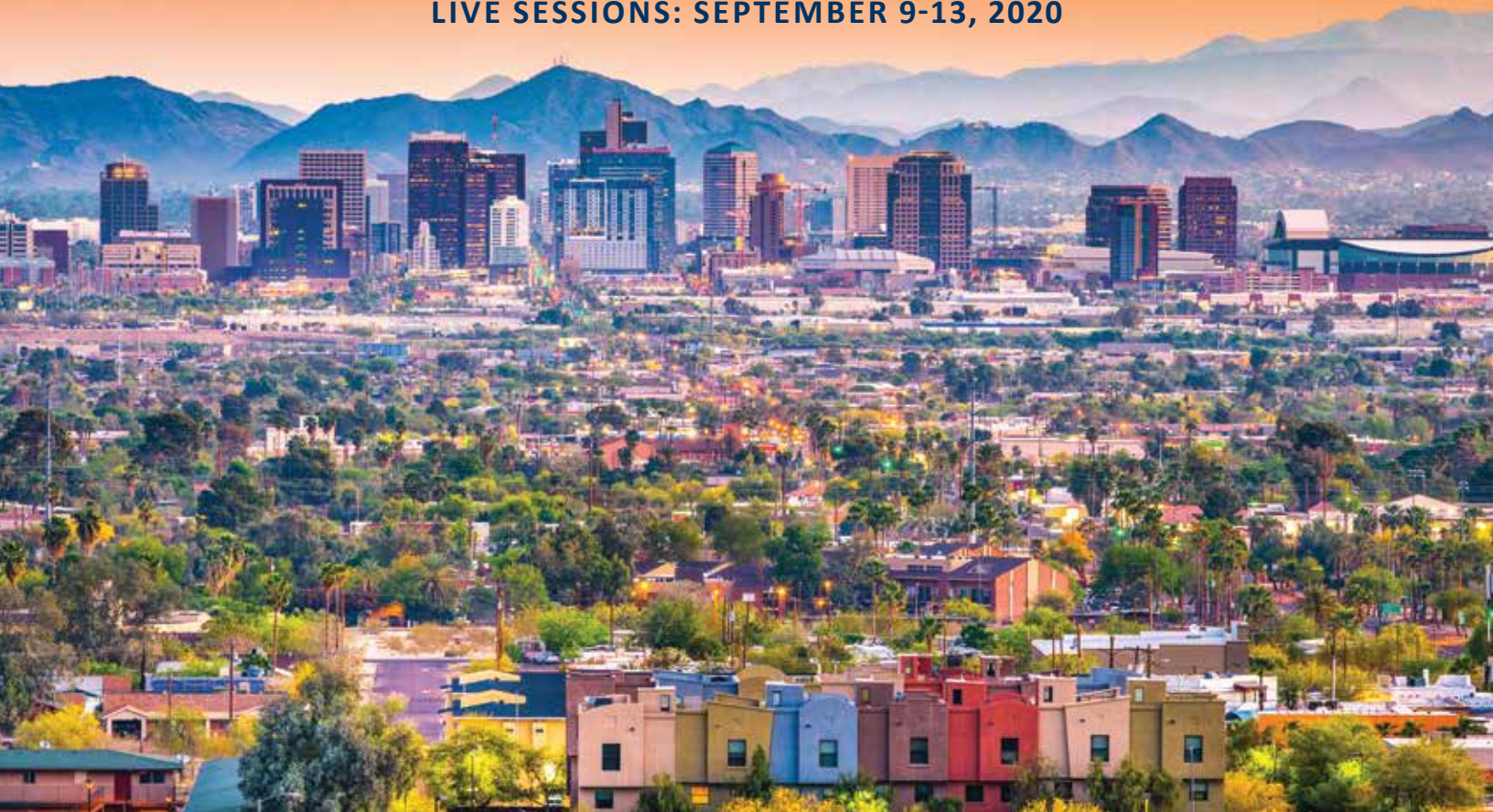


SCOLIOSIS RESEARCH SOCIETY

Virtual 55th Annual Meeting

FINAL PROGRAM

AVAILABLE ONLINE SEPTEMBER 3 THROUGH DECEMBER 31, 2020
LIVE SESSIONS: SEPTEMBER 9-13, 2020



MEETING WEBSITE: WWW.SRS.ORG/AM20
VIRTUAL MEETING PLATFORM: [HTTP://SRS.BRIGHTSPACE.COM/](http://SRS.BRIGHTSPACE.COM/)



Sponsored by the Scoliosis Research Society

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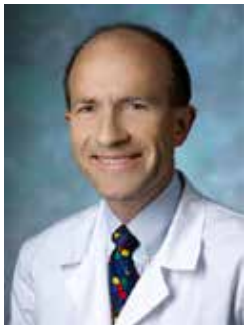
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SRS WOULD LIKE TO THANK THE FOLLOWING SUPPORTERS WHO PROVIDED GRANT SUPPORT TO THE 55TH ANNUAL MEETING.

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President's Message



On behalf of the Scoliosis Research Society (SRS), it is my great pleasure to welcome you to the virtual 55th Annual Meeting.

The Scoliosis Research Society Annual Meeting is one of the highlights of the year, and although we are not meeting in person, this full virtual event will continue our Society's legacy of bringing excellent education and the latest information on spinal deformity. This year the Annual Meeting will be presented virtually in two parts; the first part will include sessions presented live September 10 through September 13 and the second portion of the agenda includes a robust self-paced program that attendees will have access to through the end of the year. One of the challenges this year is clearing dedicated time for education, since we remain at home and clinical pressures intervene. I urge you to block out time for this program NOW on your schedule, when you would have been in Phoenix!

I want to thank the Annual Meeting Program Committee, Education Committee, faculty, paper presenters, corporate supporters, and staff who have risen to the unique challenges this year has brought. They truly showcase the creativity and perseverance of our Society.

This year there were 1,269 submitted abstracts; 185 were accepted for podium presentation and 75 for e-posters. Lindsay Andras, MD and the Program Committee have done masterful work in reviewing all of the submissions and putting together an outstanding program and then re-imagining it to fit within the virtual format. The Education Committee, led by Committee Chair, Baron Lonner, MD, have also done an outstanding job creating must-see programming, beginning on Wednesday, September 9 with the live Pre-Meeting Course sessions on, "Interdisciplinary Care for Optimizing Outcomes." The live agenda will continue on Wednesday with abstract presentations on Quality, Safety, Value, and Complications. In total there will be 68 abstracts presented live throughout the week and 105 abstracts that will be available in seven additional abstract sessions in the self-pace program.

Thursday's live sessions will kick off with concurrent abstracts sessions on Adolescent Idiopathic Scoliosis and Adult Spinal Deformity, followed by the Opening Ceremonies live stream. On Friday, September 11, there will be the session, "Nerves and Big Curves: Advances in Neuromonitoring and Management of Severe Spinal Deformity Abstracts" followed by this year's Harrington Lecture, presented by Gregory J. Redding, MD on "The Respiratory Impact of Early Onset Scoliosis and Current Treatments." Saturday begins with the papers selected as the Hibbs Clinical and Basic Research Award nominees and also includes the new Early Career Surgeon Session which will focus on case discussions on the topics of Selective Thoracic Fusion, T10-Pelvis Fusion, and Single Level Lumbar Stenosis. The live agenda will conclude on Sunday, September 13 with two concurrent Half-Day Course sessions, "Optimizing Value and Minimizing Complications in Adult Spinal Deformity Surgery" and "Fusion Scoliosis Correction in the Treatment of AIS."

Although the live agenda ends on Sunday, September 13; even more education will be available as a self-paced program through the end of 2020, this includes supplements to the Pre-Meeting Course and Half-Day Courses, abstract sessions with papers on the topics of Adolescent Idiopathic Scoliosis, Cervical Deformity, Early Onset Scoliosis/Syndromic, Sagittal/PJK, Spondylolisthesis/Congenital/Miscellaneous, Adult Spinal Deformity, and Basic Science. Industry Workshops, which will highlight topics and technologies selected by our corporate supporters, are also included in the self-paced program and I highly encourage attendees to watch these outstanding offerings.

It has been a pleasure and an honor to serve this year as your President of our great Society. The SRS staff, led by Executive Director, Ashtin Neuschaefer, deserves special recognition for all of their tremendous efforts. They make the work of being SRS President so much easier. I also want to especially thank my fellow Presidential Line colleagues who have made the challenges of this year easier for me and helped advance our Society; Immediate Past President, Peter O. Newton, MD; President-Elect Muharrem Yazici, MD; and Vice President, Christopher I. Shaffrey, MD.

Best wishes to all for a great meeting!

A handwritten signature in black ink that reads "Paul D. Sponseller MD". The signature is written in a cursive, professional style.

Paul D. Sponseller, MD, MBA
Scoliosis Research Society President 2019-2020

Planning Committees

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Meeting Information

MEETING DESCRIPTION

The 55th Annual Meeting is a complete web-based meeting experience for the realization of the Scoliosis Research Society's mission and goals, to foster the optimal care of all patients with spinal deformities. Presentations are given by leading experts in the field and have value for health care professionals who treat spinal deformities at all levels and in all ages. Over 150 papers, faculty-led instructional courses, industry-supported workshops, e-posters on the latest research, and more will be presented on an array of topics, including adolescent idiopathic scoliosis, growing spine, kyphosis, adult deformity, trauma, neuromuscular scoliosis, and tumors for live and/or self-paced viewing.

LEARNING OBJECTIVES

Upon completion of the Annual Meeting, participants should be able to:

- Analyze current research to inform best practices in clinical care.
- Implement risk stratification strategies in preoperative assessment in patients with spinal deformity.
- Incorporate multi-disciplinary teams to optimize patient outcomes.
- Identify optimal candidates for non-fusion or fusion approaches.
- Apply best practices in spinal deformity care to minimize complications and improve safety.

TARGET AUDIENCE

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

LANGUAGE

English will be the official language of the SRS Annual Meeting.

ACCREDITATION STATEMENT

The 55th Annual Meeting 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

SRS designates the live online activity, 55th Annual Meeting for a maximum of 11.50 *AMA PRA Category 1 Credits*[™]. SRS designates the self-paced enduring material, 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 each activity.

CME CERTIFICATES

CME certificates will be available online in the Annual Meeting platform upon the completion of each activity. Certificates will not be mailed or emailed. The online certificate access is the only source for this documentation. SRS asks that all Annual Meeting CME certificates be claimed no later than February 1, 2021. Please email SRS at cme@srs.org with questions.

DISCLOSURE OF CONFLICT OF INTEREST

It is the policy of SRS to insure balance, independence, objectivity and scientific rigor in all of their educational activities. In accordance with this policy, SRS identifies conflicts of interest with instructors, content managers, and other individuals who are in a position to control the content of an activity. Conflicts are resolved by SRS to ensure that all scientific research referred to, reported, or used in a CME activity conforms to the generally accepted standards of experimental design, data collection and analysis. Complete faculty disclosures are included on pages 40-66 in the final program.

FDA STATEMENT (UNITED STATES)

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

ABSTRACT VOLUME

There were 1,269 abstract submissions from 42 countries. All accepted abstracts are available in the online learning platform for live and/or self-paced viewing.

E-POSTERS

There are 75 E-Posters available for your review in the e-poster module.

The e-poster module is supported, in part, by NuVasive.

INDUSTRY WORKSHOPS

Delegates are encouraged to view the industry workshops and take part in the live workshop discussions. Each workshop is programmed by a single-supporting company and will feature presentations on topics and technologies selected by the company. Workshops are supported by DePuy Synthes; Globus Medical, Inc.; Medtronic; Medtronic; NuVasive; and Stryker. More information on the industry supported workshops can be found on pages 38-39. Please note, CME credits are not available for workshops.

EVALUATIONS

Please take time to complete the evaluations for each session you attend. Evaluations allow us to assess whether we have met your needs as a learner and what we can do to improve the next activity. After completing the evaluation surveys, CME and attendance certificates are generated.

Meeting Information

ANNOUNCEMENT BOARD

An announcement board is available in the online platform to inform learners about meeting updates and live session information.

The announcement board is supported, in part, by NuVasive.

SRS MEMBERSHIP

Attending this 55th Annual Meeting virtually will count toward membership meeting requirements. Check out the SRS Membership module for information about becoming a SRS member, upcoming meetings, and more.

EARLY CAREER SURGEONS SESSION

The Early Career Surgeons Session is a new initiative a part of SRS's recently developed, Early Career Surgeon's Program. This session offers a unique opportunity for early career members and non-members to interact closely with a panel of experts, through didactic case based discussions. All learners are invited to participate in the live session on Saturday, September 12.

The Early Career Surgeons Session is supported, in part, by a grant from Medtronic.

MEMBERS BUSINESS MEETING

All SRS members are invited to attend the virtual Member Business Meeting on Tuesday, September 8 from 09:00-09:30 US EDT/15:00-15:30 CEST/21:00-21:30 China Standard Time. Agendas will include reports from the various SRS committees, updates on SRS activities and programs, and voting.

**STAY UP TO DATE WITH SRS DURING THE 55TH ANNUAL MEETING
AND SHARE YOUR EXPERIENCES ON SOCIAL MEDIA WITH #SRSAM20**

Guest Lectures & Award Recipients

HOWARD STEEL LECTURE



Peter MacDonald, Sr.
Navajo Code Talker and Former Leader of the Navajo Nation

At the age of 15, Peter MacDonald, a Navajo from Teecnospos, Arizona, enlisted in the U.S. Marine Corps. He went through boot camp at U.S. Marine Corps Recruit Depot (MCRD), San Diego, CA. Following regular combat and communication training at USMCB in Camp Pendleton, CA, MacDonald,

along with other Navajo Marines, was secluded from other Marines for top-secret Navajo Code School. During the final phase of World War II (1944-46) MacDonald served in South Pacific as Navajo Code Talker and North China with the Sixth Marine Division.

He was honorably discharged with a rank of Corporal. He went back to his home community of Teecnospos, Arizona. After graduating from High School and Junior College in Muskogee, Oklahoma, MacDonald went on to the University of Oklahoma and graduated with an Electrical Engineering degree (BSEE). He pursued graduate studies at UCLA while working as a Project Engineer on the Polaris Missile project for (Howard) Hughes Aircraft Company. MacDonald served as Project Manager for the manufacture of the Polaris Missile Guidance System and was a member of the elite Hughes Technical Staff (MTS).

MacDonald has a long list of entrepreneurial endeavors attached to his name. Prominent among his work experience is his service as Chairman of the Navajo Nation from 1971 to 1983 and 1987 to 1991. MacDonald was re-elected to the Office of the Chairman four times—unprecedented in Navajo history. MacDonald is co-founder of the Council of Energy Resource Tribes (CERT), the National Tribal Chairman Association, the American Indian National Bank and the Native American Prep School. MacDonald also worked as Sales and Marketing Director for Cataract Engineering Company, providing engineering service for start-ups of Nuclear Power Plants and overhaul of coal-fired power plants.

Among his many honors are, Recipient of Congressional Silver Medal for heroic service to the nation as a USMC Navajo Code Talker, University of Oklahoma Engineering Hall of Fame, and Special Commendation by U.S. President Richard M. Nixon for “exceptional services to others”. Chairman MacDonald also served as a civilian member of USMC Education and Training Board of Directors appointed by the Secretary of Navy. In addition, MacDonald was featured in TIME magazine as one of 200 “Rising Leaders of America” in 1974. He received Honorary Doctorate degrees from the University of Southern Utah in Cedar City and the College of Ganado (AZ). In 1978 he also received the Distinguished Service Citation from the University of Oklahoma—the institution’s highest honor where he also served on the University of Oklahoma Board of Visitors and Bacone College Board of Regents.

MacDonald served on several national task forces and commissions (appointments by Presidents of the United States and Governors of Arizona and New Mexico). He now lectures at schools, colleges and universities, clubs, political organizations, government agencies and businesses. He is married and has five children and nine grandchildren. Currently he lives with his wife, Wanda, on the Navajo reservation at Tuba City, Arizona. MacDonald is currently President of the Navajo Code Talkers Association, raising funds to build National Navajo Code Talkers Museum and Veteran Center to honor Heroes of WWII, whose unique legacy, from 1942 through 1945, helped win the war transmitting top-secret messages in every major battle in the Pacific theatre. Navajo Code was the only military code, in modern history, never broken by an enemy.

HARRINGTON LECTURE



Gregory J. Redding, MD
The Respiratory Impact of Early Onset Scoliosis and Current Treatments: Where Do We Go From Here?

Early onset scoliosis (EOS) often produces progressive restrictive and less often obstructive lung disease, with small lung volumes, stiff spine and chest wall, and reduced respiratory muscle motion and strength. Current surgical treatments act to distract the

spine, reduce spine curvature, and promote vertebral length and in the process almost preserves lung function that exists prior to surgery. This is progress but not more is needed. New treatments should accomplish the following: 1) Preserve motion of the ribs and diaphragm, 2) Maximize function of both lungs, 3) Create space for further lung growth, and 4) Enhance respiratory muscle strength. Current treatments increase intrathoracic space alone. Improvements in treatments must salvage and/or preserve motion to maintain or improve respiratory reserve over time. This will require multiple disciplines to design the next generation surgical and non-surgical approaches to early onset spine and chest wall deformities.

Dr. Greg Redding is a professor of pediatrics at the University of Washington and Chief of the Pulmonary and Sleep Medicine Division at Seattle Children’s Hospital. Dr. Redding has conducted clinical research for 40 years and has published more than 200 peer-reviewed articles, reviews, and chapters. He has received two lifetime achievement awards in pediatric respiratory medicine from the American Academy of Pediatrics and from the American Thoracic Society. He began to work in the field of spine and thoracic cage deformity in 2004 after meeting Dr. Bob Campbell. He has lectured internationally about the impact and mechanisms of impaired breathing due to spine deformities in early childhood and their functional consequences. He received the first Robert M. Campbell Jr. Award for Innovation in Early Onset Scoliosis in 2018. He remains actively conducting clinical research and recruiting more pediatric pulmonologists to collaborate with their spine colleagues throughout the world.

Guest Lectures & Award Recipients

WALTER P. BLOUNT HUMANITARIAN AWARD RECIPIENT

The Walter P. Blount Humanitarian acknowledges outstanding service to those with spinal deformity, and for generosity to the profession and society. The 2020 Walter P. Blount Humanitarian award recipient will be acknowledged during the virtual 55th Annual Meeting opening ceremonies and will be presented the award in-person at the 2021 Annual Meeting.



Francisco Javier Sánchez Pérez-Grueso Sr., MD

Dr. Francisco J. Sánchez Pérez-Grueso was born in Toledo, Spain. He completed his medical school at the Universidad de Salamanca and did his Orthopedic Surgery residency program at Hospital Universitario La Paz, Madrid. After his Residency, he joined the Spinal Deformity Unit as a staff member and soon after started a surgical program on pediatric spinal deformity surgery.

He expanded his training in spine deformity surgery visiting different specialized international centers (The Robert Jones and Agnes Hunt Orthop. Spine Disorders Dep. Oswestry, UK; Deutches Skoliosezentrum, Bad Wildungen, Germany; Hospital Saint Vincent de Paul, Paris; Hospital for Special Surgery, New York, USA). He was promoted to Chief of the Spine Unit Hospital La Paz in 2006 until his retirement in October 2018. He has been appointed Emeritus of Madrid Health System developing his research activity at Hospital La Paz.

His membership with the SRS began in 1995. He served on the Growing Spine, Global Outreach, and Globalization Committees. He became chair of the Growing Spine Committee in 2009, Director at large in the SRS Board from 2010 to 2012, and senior SRS travelling fellow in 2018.

He began working in Ghana in 2003 as part of the FOCOS initiative led by Dr. Oheneba Boachie-Adjei. For over 10 years he worked with a group of committed surgeons focused on helping children suffering from severe spine deformities. Ultimately, the Foundation was able to establish the FOCOS teaching hospital, which currently trains orthopaedic surgeons from Ghana and across West Africa.

Also alongside Dr. Boachie, they established the curriculum for the development program of spine surgeons in Sofia, Bulgaria, sponsored by the SRS. After a year of navigating administrative hurdles, the first surgery took place in 2008, working together with Dr. Steve Mardjetko. In the subsequent four years, the project helped local surgeons lead by Dr. Yablansky to achieve full autonomy in performing complex spine surgery.

In May 2017, there was a gathering to mark the 10-year anniversary of the program in Plovdiv, where the founders joined local surgeons, as well as Dr. David Clements and Dr. Ahmet Alanay, who have continued with the initiative.

Throughout these years in Spain, he developed a great activity in the dissemination of new concepts and techniques in the treatment of spinal deformities. In 2004 he became the president of the Spanish Spine Society (GEER) from 2004 to 2006.

Within his research activity, his participation in different Study Groups (GSSG and ESSG) stands out. He has published more than 50 peer-reviewed papers and more than 100 podium presentation in national and international meetings.

LIFETIME ACHIEVEMENT AWARD RECIPIENTS

The Lifetime Achievement award recipients were chosen from among the SRS membership, based on long and distinguished service to the Society and spinal deformity research and care. The 2020 Lifetime Achievement award recipients will be acknowledged during the virtual 55th Annual Meeting opening ceremonies and will be presented the awards in-person at the 2021 Annual Meeting.



Jean Dubouset, MD

Jean Dubouset, born in 1936, is a pediatric orthopedic surgeon, now retired from clinical work. He received his medical education at Clermont Ferrand and Paris Universities, graduating with his MD in general surgery in 1965. He practiced pediatric orthopedics both privately and publicly in Paris until 1979, then moved to full time public practice at St. Vincent de Paul

hospital for his entire remaining career, and acted as Professor of Pediatric Orthopedic surgery until 1991. He became a Member of the National Academy of Medicine and a member of the French Academy of Surgery in 2002. He was also member of the scientific committee of the Yves Cotrel Foundation at the Institut de France and is Chevalier de la Légion d'Honneur (2000).

Jean Dubouset has participated in the SRS Annual meeting almost every year beginning in 1969. He attended the meeting in Anaheim alongside Christian Salanova and Pierre Stagnara and after a 6 week tour of important scoliosis institutions in the US, he later returned to France with his new knowledge of the Halo device and the Milwaukee brace. He became a corresponding member of SRS in 1978, then Active Fellow, and is currently an Emeritus Member. He was the Harrington lecturer of the SRS at the Ottawa meeting of 1996 under the presidency of Vernon Tolo, and got the prestigious W. Blount Humanitarian award of the Society in 2010.

After reading the book of Hodgson in 1970, Jean Dubouset introduced France to wide anterior spine surgery in children. After working on paralytic pelvic obliquity in preparation for the GES (A French scoliosis Study group founded in 1969 on the model of SRS) Meeting in 1973 in Paris, he introduced the 3D basic principles for spinal pathology describing pelvic & cephalic vertebra concepts leading to economical conical balance system in humans. He is Co-inventor with Yves Cotrel of CD instrumentation for spine surgery in 1983, which describes the succession of scoliotic curves along the gravity line axis of the body with

Guest Lectures & Award Recipients

their apical and junctional zone, and is useful for the segmental instrumentation as well as the rotation maneuver of the rods and important for the strategies for correction. He performed the first CD instrumentation in the US at the Leatherman Center in Louisville in 1985 and soon after in Boston with John Hall.

He was an active developer of GICD study group, travelling and teaching all over the world. With his wife, Anne Marie, he spent 1987 on sabbatical in the USA, half in Miami with Harry Shufleberger and the other half at Texas Scottish Right Hospital in Dallas with Tony Herring's team. During his sabbatical year in the USA, he did important work researching about etiology of idiopathic scoliosis and doing experimental research in chickens after a pinealectomy and the role of melatonin in its initiation which was presented at the SIROT meeting in 1988. His work continued with Masafumi Machida in Japan, later being presented and receiving awards at the 2016 SRS Annual Meeting in Prague.

He also had the opportunity during his sabbatical year in the US to develop the use of ILIZAROV system to perform salvage procedures of difficult spinal problems, elongating or shortening by compression of the pathological deformities.

Jean Dubousset was the initiator of the EOS imaging low dose radiation system, thanks to his collaboration with George Charpak (Nobel Prize winner) and Biomechanics engineers from ENSAM Paris and LIO Montreal. Creating a 3D computer reconstruction of the entire skeleton in a standing functional position, the first application was at St Vincent de Paul Hospital in Paris in 2000.

Jean Dubousset is a member of the most important scientific societies all over the world regarding pediatric orthopedics, especially spine, general pediatrics, and pediatric tumor diseases with many distinctions. He still continues to research human biomechanics focusing on Etiology of AIS and the importance of transversal plane of the body and on the consequences of ageing on the spinal alignment.

Finally Jean Dubousset's artistic activities include modern stained glass restoration of the destroyed windows of a 15th century church close to his country side family house. He also creates smaller picture pieces using original techniques.



Stuart L. Weinstein, MD

Dr. Weinstein is the Ignacio V. Ponseti Chair and Professor of Orthopaedic Surgery and Professor of Pediatrics at The University of Iowa. Dr. Weinstein received his A.B. Honors degree in Political Science and History from the University of Illinois in 1968. He received his medical degree (Alpha Omega Alpha) from the University of Iowa in 1972. After interning in Internal Medicine at The University of California San Francisco, he returned to the University of Iowa for a residency in Orthopaedic Surgery. In 1976 he joined the faculty of the Department of Orthopaedic Surgery at The University of Iowa.

Dr. Weinstein was an NIH funded researcher. He has published more than 260 scientific articles in peer review journals (including

the NEJM, JAMA, The Lancet, Nature). His research work has focused on spinal deformity in children and the natural history and long-term outcome of pediatric musculoskeletal conditions. He has edited three major textbooks including *The Pediatric Spine: Principles and Practice*; Lovell and Winter's *Pediatric Orthopaedics* and Turek's *Orthopaedics*.

Dr. Weinstein's many contributions to orthopaedics have been recognized by his receipt of the Bristol-Myers Squibb/Zimmer Award for Distinguished Achievement in Orthopaedic Research; The Kappa Delta /Orthopaedic Research and Education Foundation Clinical Research Award (1998 and again in 2015- for the Evidence Base for the Prognosis and Treatment of Adolescent Idiopathic Scoliosis); The ABJS/CORR Nicolas Andry Award for research (2018); The Russell Hibbs Award for Clinical Research (1998, 2014, 2015) given by the Scoliosis Research Society; and The Arthur H. Heune Memorial Award, given by the St. Giles Foundation and The Pediatric Orthopaedic Society of North America. In 2005, Dr. Weinstein was the recipient of the Alfred R. Shands, Sr., MD Award, presented by the Orthopaedic Research Society and The American Orthopaedic Association for his significant contributions to orthopaedics and his devotion of a professional lifetime to furthering knowledge in the fields of musculoskeletal disease.

Dr. Weinstein received the 2000 Iowa Board of Regents Award for Faculty Excellence for sustained record of excellence across the spectrum of faculty endeavors. In 2003, he received the Ernest O. Theilen Clinical Teaching and Service Award presented by the Roy J. and Lucille Carver College of Medicine. In 2009, he received the highest award in the College of Medicine, the Distinguished Mentor Award presented by the Roy J. and Lucille Carver College of Medicine. In 2011, Dr. Weinstein received the William W. Tipton, Jr., MD Award for Outstanding Leadership in Orthopaedics from the American Academy of Orthopaedic Surgeons and the Orthopaedic Research and Education Foundation. In 2010 he received the lifetime achievement from POSNA. In 2012, he received the American Orthopaedic Association's Distinguished Contributions to Orthopaedics Award. In 2016, he was honored by the Vietnamese Government and Minister of Health and awarded the Civilian Medal for Contributions to the Development of Healthcare in Vietnam. In 2019 he received the lifetime achievement award from SOSORT.

Dr. Weinstein was a recipient of an American, British, Canadian (ABC) Traveling Fellowship in 1985. He has been honored for his contributions to Orthopaedic Surgery by honorary memberships in National Orthopaedic Associations around the world including Australia, New Zealand, Germany, Great Britain Thailand, China, Portugal, and Argentina. In 2007, he was made a Fellow of The Royal College of Surgeons of England and in 2014 he was made an Honorary Member of the European Federation of National Orthopedic Associations of Orthopaedics and Traumatology (EFORT).

Dr. Weinstein is past president of the American Academy of Orthopaedic Surgeons, The American Orthopaedic Association, The American Board of Orthopaedic Surgery, The Pediatric Orthopaedic Society of North America, The United States National Action

Guest Lectures & Award Recipients

Network of the International Bone and Joint Decade, The International Center for Orthopaedic Education (ICOE), Doctors for Medical Liability Reform (DMLR), Past Chairman of the Board of Trustees of the Journal of Bone and Joint Surgery (JBJS) and past Chairman of the American Association of Orthopaedic Surgeons Political Action Committee. He currently serves as an American College of Surgeons Children's Hospital Surgery Surveyor and a Trustee for the Orthopaedic Research and Education Foundation.

Conflict of Interest Disclosures

If noted, the relationships disclosed are as follows: a – grants/research support; b – consultant; c – stock/shareholder (self-managed); d – speaker’s bureau; e – advisory board or panel; f – employee, salary (commercial interest); g – other financial or material support (royalties, patents, etc.)

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If noted, the relationships disclosed are as follows: a – grants/research support; b – consultant; c – stock/shareholder (self-managed); d – speaker’s bureau; e – advisory board or panel; f – employee, salary (commercial interest); g – other financial or material support (royalties, patents, etc.)

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Meeting Outline

Times are provided in three different time zones: US Eastern Daylight Time, Central European Summer Time, and China Standard Time.

US EASTERN DAYLIGHT TIME		
DATE	TIME	SESSION
Tuesday, September 8	9:00-9:30	Member Business Meeting*
Wednesday, September 9	8:00-10:10 10:20-12:00	Pre-Meeting Course Scientific Program
Thursday, September 10	9:00-10:30 10:30-11:35	Scientific Program (2 Concurrent Sessions) Opening Ceremonies*
Friday, September 11	9:00-11:15	Scientific Program and Harrington Lecture
Saturday, September 12	9:00-10:50 10:50-11:30 11:30-12:40	Hibbs Basic Science and Clinical Research Award Nominees 2021 Preview, Scientific Awards & Transfer of Presidency* Early Career Surgeons Session*
Sunday, September 13	9:00-11:00	Half-Day Courses (2 Concurrent Sessions)
CHINA STANDARD TIME		
DATE	TIME	SESSION
Tuesday, September 8	21:00-21:30	Member Business Meeting*
Wednesday, September 9	20:00-22:10 22:20-00:00	Pre-Meeting Course Scientific Program
Thursday, September 10	21:00-22:30 22:30-23:35	Scientific Program (2 Concurrent Sessions) Opening Ceremonies*
Friday, September 11	21:00-23:15	Scientific Program and Harrington Lecture
Saturday, September 12	21:00-22:50 22:50-23:30 23:30-00:40	Hibbs Basic Science and Clinical Research Award Nominees 2021 Preview, Scientific Awards & Transfer of Presidency* Early Career Surgeons Session*
Sunday, September 13	21:00-23:00	Half-Day Courses (2 Concurrent Sessions)
CENTRAL EUROPEAN SUMMER TIME		
DATE	TIME	SESSION
Tuesday, September 8	15:00-15:30	Member Business Meeting*
Wednesday, September 9	14:00-16:10 16:20-18:00	Pre-Meeting Course Scientific Program
Thursday, September 10	15:00-16:30 16:30-17:35	Scientific Program (2 Concurrent Sessions) Opening Ceremonies*
Friday, September 11	15:00-17:15	Scientific Program and Harrington Lecture
Saturday, September 12	15:00-16:50 16:50-17:30 17:30-18:40	Hibbs Basic Science and Clinical Research Award Nominees 2021 Preview, Scientific Awards & Transfer of Presidency* Early Career Surgeons Session*
Sunday, September 13	15:00-17:00	Half-Day Courses (2 Concurrent Sessions)
SELF-PACED CONTENT		
Pre-Meeting Course Supplement Half-Day Course Abstract Supplements: Adult & Pediatric Abstract Sessions Membership Information Session* Industry Workshops*		

*Denotes non-CME session

Live Session Agenda

Session times are listed in US Eastern Daylight Time.

Tuesday, September 8, 2020

9:00-9:30 US EDT / 21:00-21:30 CST / 15:00-15:30 CEST

Member Business Meeting*

All SRS members are invited to join the virtual Member Business Meeting. Agendas will include reports from the various SRS committees, updates on SRS activities and programs, and voting.

Wednesday, September 9, 2020

8:00-10:10 US EDT / 20:00-22:10 CST / 14:00-16:10 CEST

Pre-Meeting Course: Interdisciplinary Care for Optimizing Outcomes in the Patient with Spinal Deformity

The Pre-Meeting Course is supported, in part, by a grant from Globus Medical, Inc.

Course Chair: Baron S. Lonner, MD; Course Co-Chairs: Michael S. Chang, MD and Gregory R. White, MD

Organizing Committee: Stefan Parent, MD, PhD; Amer F. Samdani, MD; Suken A. Shah, MD; Paul D. Sponseller, MD, MBA; Burt Yaszay, MD

Section 1: Interdisciplinary Clinical Support and Perioperative Optimization

Moderators: Michael S. Chang, MD & Gregory R. White, MD

- 8:00-8:02 **Course Welcome**
Baron S. Lonner, MD
- 8:02-8:10 **Anesthesia Optimization: Pediatric**
Steve Beck, MD
- 8:10-8:18 **Anesthesia Optimization: Adult**
Lee Kimball, MD
- 8:18-8:26 **Pulmonary Assessment**
Gregory J. Redding, MD
- 8:26-8:34 **When to Seek a Genetics Consult**
Derek Neilson, MD
- 8:34-8:39 **Two-Surgeon Teams to Improve Outcomes**
Jamal McClendon Jr., MD
- 8:39-8:44 **Two-Surgeon Teams to Improve Outcomes**
Jaysson T. Brooks, MD
- 8:44-8:49 **Debate: Access Surgeons are Beneficial to the Team**
Kenneth Fang, MD, FACS
- 8:49-8:54 **Debate: Access Surgeons are Unnecessary Resources**
Stefan Parent, MD, PhD
- 8:54-9:04 **Discussion**
- Moderators: Samuel K. Cho, MD and Suken A. Shah, MD
- 9:04-9:12 **Role of the Intensivist: How is Intensive Care Best Incorporated Into the Care Paradigm?**
Ayan Sen, MD
- 9:12-9:20 **Post-Operative Pain Management: Minimizing Opioids and Complications**
John Jerman, MD
- 9:20-9:26 **Nursing: Improving Patient Outcomes and Satisfaction**
Kristen Venuti, CRNP
- 9:26-9:32 **Hospital Team: Improving Patient Outcomes and Satisfaction**
Miranda Falk, PA-C
- 9:32-9:37 **The Patient's Perspective in Shared Surgical Decision Making: Pediatric**
Eric D. Shirley, MD

*Denotes non-CME session

Live Session Agenda - Wednesday, September 9

Session times are listed in US Eastern Daylight Time.

- 9:37-9:42 **The Adult Patient's Perspective in Shared Surgical Decision Making**
Ferran Pellisé, MD, PhD
- 9:42-9:52 **Utilizing the C-Suite**
Barbara McWilliams, RN, BSN, MBA
- 9:52-10:10 **Discussion**
- 10:10-10:20 **Break**

10:20-12:00 US EDT / 22:20-00:00 CST / 16:20-18:00 CEST

Session 1: Quality/Safety/Value/Complications

Moderators: *Suken A. Shah, MD & David L. Skaggs, MD*

- 10:20-10:24 **Paper #13: Use of Predictive Machine Learning Models at the Population Level Has the Potential to Save Cost by Directing Economic Resources to Those Likely to Improve Most: A Simulation Analysis Stratified by Risk in Largest Combined US/European ASD Registry**
Rushikesh S. Joshi, BS; Miquel Serra-Burriel, PhD; Ferran Pellisé, MD, PhD; Darryl Lau, MD; Justin S. Smith, MD, PhD; Michael P. Kelly, MD; Ahmet Alanay, MD; Emre R. Acaroglu, MD; Francisco Javier S. Perez-Grueso, MD; Frank S. Kleinstueck, MD; Ibrahim Obeid, MD; Douglas C. Burton, MD; Virginie Lafage, PhD; Frank J. Schwab, MD; Christopher I. Shaffrey, MD; Shay Bess, MD; Christopher P. Ames, MD
- 10:24-10:28 **Paper #14: Clinical Review of Spine Surgery Patient Safety Indicators Avoids CMS Payment Reductions**
John A. Buza III, MD; Ryan Nazar, MD; Portia A. Steele, RN; Leah Y. Carreon, MD; Joseph L. Laratta, MD; Steven D. Glassman, MD; Jeffrey L. Gum, MD
- 10:28-10:32 **Paper #15: The Impact of Early Physical Therapy on Resource Utilization and Spending in First Time Presenters of Low Back Pain**
Majd Marrache, MD; Niyathi Prasad, BS; Suresh Nayar, MD; Matt Best, MD; Richard L. Skolasky, PhD
- 10:32-10:41 **Discussion**
- 10:41-10:45 **Paper #16: Critical Analysis of Anterior/Posterior Staged vs. Same Day Surgery in Patients Undergoing Identical Corrective Surgery for Adult Spinal Deformity**
Waleed Ahmad, BS; Peter G. Passias, MD; Renaud Lafage, MS; Virginie Lafage, PhD; Breton G. Line, BS; Gregory M. Mundis, MD; Robert K. Eastlack, MD; Pierce D. Nunley, MD; D. Kojo Hamilton, MD; Robert A. Hart, MD; Douglas C. Burton, MD; Christopher I. Shaffrey, MD; Frank J. Schwab, MD; Christopher P. Ames, MD; Justin S. Smith, MD, PhD; Shay Bess, MD; Eric O. Klineberg, MD
- 10:45-10:49 **Paper #17: Does a Dedicated "Scoliosis Team" and Surgical Standardization Improve Outcomes in AIS Surgery and is it Reproducible?**
Vishal Sarwahi, MD, MBBS; Sayyida Hasan, BS; Jesse Galina, BS; Aaron M. Atlas, BS; Michelle Kars, MD; Benita Liao, MD; Yungtai Lo, PhD; Terry D. Amaral, MD
- 10:49-10:53 **Paper #18: Ultrasonic Bone Scalpel Does Not Reduce Blood Loss in Adolescent Idiopathic Scoliosis: Randomized Clinical Trial**
Sumeet Garg, MD; James Joseph Thomas, MD; Hannah Quick, BA; Patrick Carry, MS; Eun Kim; Mark A. Erickson, MD
- 10:53-11:02 **Discussion**
- 11:02-11:06 **Paper #19: The Necessity and Risk Factors of Subsequent Fusion After Decompression Alone for Lumbar Spinal Stenosis with Lumbar Spondylolisthesis: 5-Year Follow-Up in 2 Large Populations**
Hikari Urakawa, MD; Andre M. Samuel, MD; Avani S. Vaishnav, MBBS; Yoshihiro Katsuura, MD; Sravisht Iyer, MD; Steven J. Mcanany, MD; Todd J. Albert, MD; (Catherine) Himo Gang, MPH; Sheeraz Qureshi, MD
- 11:06-11:10 **Paper #20: Predicting Mechanical Complications After Adult Spinal Deformity Surgery: Modified Global Alignment and Proportion Scoring with Body Mass Index and Bone Mineral Density (GAPB) vs Global Alignment and Proportion (GAP) Score in Each Categorical Comparative**
Sung Hyun Noh, MD; Kyunghyun Kim, MD

*Denotes non-CME session

Live Session Agenda - Wednesday, September 9

Session times are listed in US Eastern Daylight Time.

- 11:10-11:14 **Paper #21: Lower Extremity Motor Scores (LEMS) After Complex Adult Spinal Deformity Surgery: 5-Year Follow-Up of the Scolio-Risk-1 Study**
Lawrence G. Lenke, MD; Meghan Cerpa, MPH; Scott Zuckerman, MD; Zeeshan M. Sardar, MD; Yong Qiu, MD; Christopher I. Shaffrey, MD; Leah Y. Carreon, MD; Kenneth Cheung, MD, MBBS, FRCS; Michael P. Kelly, MD; Ames P. Christopher, MD; Frank J. Schwab, MD; Oheneba Boachie-Adjei, MD; Yukihiko Matsuyama, MD, PhD; Khaled M. Kebaish, MD
- 11:14-11:23 **Discussion**
- 11:23-11:27 **Paper #22: The Additional Economic Burden of Frailty in Adult Spinal Deformity Patients Undergoing Surgical Intervention**
Peter G. Passias, MD; Waleed Ahmad, BS; Renaud Lafage, MS; Virginie Lafage, PhD; Khaled M. Kebaish, MD; Alan H. Daniels, MD; Eric O. Klineberg, MD; Alex Soroceanu, MPH; Jeffrey L. Gum, MD; Robert A. Hart, MD; Douglas C. Burton, MD; Justin S. Smith, MD, PhD; Christopher P. Ames, MD; Christopher I. Shaffrey, MD; Frank J. Schwab, MD; Richard Hostin, MD; Shay Bess, MD
- 11:27-11:31 **Paper #23: Rates of Loosening, Failure, and Revision of Iliac Fixation in Adult Deformity Surgery**
Robert K. Eastlack, MD; Alex Soroceanu, MPH; Gregory M. Mundis, MD; Alan H. Daniels, MD; Justin S. Smith, MD, PhD; Breton G. Line, BS; Peter G. Passias, MD; Pierce D. Nunley, MD; David O. Okonkwo, MD; Khoi D. Than, MD; Juan S. Uribe, MD; Praveen V. Mummaneni, MD; Dean Chou, MD; Khaled M. Kebaish, MD; Christopher I. Shaffrey, MD; Shay Bess, MD
- 11:31-11:35 **Paper #24: Prolonged Post-Operative Intubation Following Spinal Fusion in Cerebral Palsy: Are there Modifiable Risk Factors and Associated Consequences?**
Scott M. LaValva, BA; Keith Baldwin, MD; Ishaan Swarup, MD; John M. Flynn, MD; Joshua M. Pahys, MD; Burt Yaszay, MD; Mark Abel, MD; Keith Bachmann, MD; Suken A. Shah, MD; Paul D. Sponseller, MD, MBA; Harms Study Group; Patrick J. Cahill, MD
- 11:35-11:44 **Discussion**
Paper #25: has been withdrawn
- 11:44-11:48 **Paper #26: Patient Centered Interdisciplinary Medical Optimization Clinic Decreases Surgical Site Infection (SSI) Risk in Pediatric Neuromuscular and Syndromic Scoliosis Patients.**
Amy L. McIntosh, MD; Kerry Wilder, PhD
- 11:48-11:52 **Paper #27: Surgical Site Infection Incidence in Neuromuscular Posterior Spinal Fusion: Comparing Incidence Before and After the Implementation of the 2013 Best Practice Guideline**
Stephen Stephan, MD; Kenneth D. Illingworth, MD; Kavish Gupta, BS; David L. Skaggs, MD; Lindsay M. Andras, MD
- 11:52-12:00 **Discussion**

*Denotes non-CME session

Live Session Agenda - Thursday, September 10

Session times are listed in US Eastern Daylight Time.

Thursday, September 10, 2020

9:00-9:05 **Meeting Welcome**
Lindsay C. Andras, MD and Paul D. Sponseller, MD, MBA

9:05-10:30 US EDT / 21:05-22:30 CST / 15:05-16:30 CEST

Session 2A: Adolescent Idiopathic Scoliosis I: From Assessing Skeletal Maturity to Managing Pain (Runs Concurrently with Session 2B)

Moderators: *Kenneth MC Cheung, MD & Laurel C. Blakemore, MD*

- 9:05-9:09 **Paper #1: Refining the Proximal Humerus Ossification System Using Medial Physseal Closure**
Don Li, PhD; Logan Petit, MD; Joseph Kahan, MD; Elsayed Attia, MD; Ashley Startzman, MD; Eric Li; Siddharth Jadhav, MD; Alana Munger, MD; Ahmed Elabd, MD; Janelle Greene, MD; Jonathan Cui, MD; Ronan Talty, BS; Brett Heldt, BS; Daniel R. Cooperman, MD; Brian G. Smith, MD
- 9:09-9:13 **Paper #2: Multi-Site Assessment of Pediatric Bone Age Using Deep Learning**
Aly A. Valliani, BS; John T. Schwartz, BS; Eric Geng, BS; Varun Arvind, BS; Christopher Mikhail, MD; Jun Kim, MD; Samuel K. Cho, MD
- 9:13-9:17 **Paper #3: Comparison between Low-Dose Slot Scanning and Conventional Radiography for Hand Bone Age: Imaging Quality and Radiation Dose**
Jie C. Nguyen, MD, MS; Andressa G. Alves, MD; Anthony Nicholson, BS; Liya Gendler, MD; Victor Ho-Fung, MD; Sze Alyssa, BA; Michael Nguyen, BS; Zhu Winnie, PhD; Divya Talwar, PhD; Kassa Darge, MD, PhD; John (Jack) M. Flynn, MD; Patrick J. Cahill, MD
- 9:17-9:26 **Discussion**
- 9:26-9:30 **Paper #4: MOBI (My Orthopedic Brace Inventory): A New Reliable and Valid Questionnaire to Identify Factors Associated with Poor Adherence to Brace Treatment in AIS**
Omar Elsemin, BSN; Marie Beausejour, PhD; Samuel Sassine; Julie Joncas, RN; Soraya Barchi, BSc; Sylvie Le May, PhD; Nikita Cobetto, PhD; Carole Fortin, PhD; Carl-Eric Aubin, PhD; Stefan Parent, MD, PhD; Hubert Labelle, MD
- 9:30-9:34 **Paper #5: AIS Patients with Pain Catastrophizing Have Worse SRS Scores 1 Year Postoperatively**
Kiley F. Poppino, BS; Shelby P. Cerza, MA; Teresa L. Collins-Jones, PhD; Brandon A. Ramo, MD
- 9:34-9:38 **Paper #6: The Effects of Obesity and Poverty on Perioperative Complications in Adolescent Idiopathic Scoliosis: A Multi-Center Analysis**
Tyler C. McDonald, MD; Michael J. Heffernan, MD; Bryant Song, BS; Hamdi Sukkarieh, MD; Lawrence L. L. Haber, MD; Michael Joseph Conklin, MD; Shawn R. Gilbert, MD; Benjamin W. Sheffer, MD; William H. Stafford, BS; Jeffrey E. Martus, MD; Charles H. Crawford III, MD; Leah Y. Carreon, MD; John P. P. Lubicky, MD; David S. Tager, MD; David B. Bumpass, MD; Killian Coyne, BS; Brandon A. Ramo, MD; Patrick B. Wright, MD; Jaysson T. Brooks, MD
- 9:38-9:47 **Discussion**
- 9:47-9:51 **Paper #7: Comparison of Four Different Methods of Correction for Adolescent Idiopathic Scoliosis: Results from A National Cohort Study**
Sebastien Pesenti, MD, PhD; Federico Solla, MD; Yann Philippe Charles, MD, PhD; Brice Ilharreborde, MD, PhD; Christian Morin, MD; Jean-Luc Clement, MD
- 9:51-9:55 **Paper #8: What Factors are Associated with Greater Apical Derotation? Is Single or Dual Rod Derotation Better?**
Steven W. Hwang, MD; Joshua M. Pahys, MD; Tracey P. Bastrom, MA; Peter O. Newton, MD; Suken A. Shah, MD; Stefan Parent, MD, PhD; Harms Study Group; Amer F. Samdani, MD
- 9:55-9:59 **Paper #9: Perioperative Steroid Use in Patients Undergoing PSF for AIS**
Tracy Ruska, NP; Thomas Austin, MD, MS; Ndeye F. Guisse, MS; Robert W. Bruce Jr., MD; Joshua S. Murphy, MD; Nicholas D. Fletcher, MD
- 9:59-10:08 **Discussion**
- 10:08-10:12 **Paper #10: Parents Anxiety Predicts Child's Narcotic Use**
Natalya Sarkisova, BS; Lindsay M. Andras, MD; Joshua Yang, BA; Vernon T. Tolo, MD; David L. Skaggs, MD

*Denotes non-CME session

Live Session Agenda - Thursday, September 10

Session times are listed in US Eastern Daylight Time.

10:12-10:16 **Paper #11: Zero PCA is an Achievable Target for Postoperative Rapid Recovery Management of AIS Patients**
Vishal Sarwahi, MD, MBBS; Sayyida Hasan, BS; Michelle Kars, MD; Benita Liao, MD; Jesse Galina, BS; Yungtai Lo, PhD; Terry D. Amaral, MD

10:16-10:20 **Paper #12: Can Opioid Free Anesthesia (OFA) Reduce Postoperative Pain After Adolescent Idiopathic Scoliosis Surgery?**
Florence Julien-Marsollier, MD; Rita Assaker, MD; Souhayl Dahmani, MD, PhD; Brice Ilharreborde, MD, PhD

10:20-10:30 **Discussion**

9:05-10:30 US EDT / 21:05-22:30 CST / 15:05-16:30 CEST

Session 2B: Adult Spinal Deformity I (Runs Concurrently with Session 2A)

Moderators: Ehsan Jazini, MD & Praveen V. Mummaneni, MD

9:05-9:09 **Paper #43: Dubousset Functional Test (DFT): The First Application on Spine Patients and Asymptomatic Volunteers**
Bassel G. Diebo, MD; David Kim, BS; Michael G. Dubner, BS; Neil Patel, BS; Sanjeev Agarwal, MD; Harleen Kaur, BS; George A. Beyer, MS; Neil V. Shah, MD, MS; Renaud Lafage, MS; Carl B. Paulino, MD; Peter G. Passias, MD; Vincent Challier, MD; Frank J. Schwab, MD; Virginie Lafage, PhD

9:09-9:13 **Paper #44: Relationships Between Radiographic Parameters and Spinopelvic Muscles in Adult Spinal Deformity Patients**
Emmanuelle Ferrero, MD, PhD; Pierre Guigui, MD; Wafa Skalli, PhD; Virginie Lafage, PhD

9:13-9:17 **Paper #45: Risk Factors for Rapid Curve Progression in De Novo Degenerative Lumbar Scoliosis**
Dmitrii Ptashnikov, MD, PhD; Sergei Masevnin, MD, PhD; Dmitrii Mikhailov, MD, PhD; Nikita Zaborovskii, MD, PhD; Anton Denisov, MD

9:17-9:26 **Discussion**

9:26-9:30 **Paper #46: Efficacy of Adult Spinal Deformity Surgical Decision Making (ASD-SDM) Score in Patients Over 40 Years as an Indication for Surgical Management.**
Sreenath R. Jakinapally, MD; Louis Boissiere, MD; Ferran Pellisé, MD, PhD; Francisco Javier S. Perez-Grueso, MD; Frank S. Kleinstueck, MD; Emre R. Acaroglu, MD; Ahmet Alanay, MD; Ibrahim Obeid, MD

9:30-9:34 **Paper #47: Identifying Subsets of Adult Spinal Deformity Patients that Maintained a Positive Response to Non-Operative Management**
Peter G. Passias, MD; Waleed Ahmad, BS; Frank A. Segreto, BS; Renaud Lafage, MS; Virginie Lafage, PhD; Alex Sorocceanu, MPH; Alan H. Daniels, MD; Jeffrey L. Gum, MD; Breton G. Line, BS; Robert A. Hart, MD; Douglas C. Burton, MD; Justin S. Smith, MD, PhD; Christopher P. Ames, MD; Christopher I. Shaffrey, MD; Frank J. Schwab, MD; Richard Hostin, MD; Shay Bess, MD

9:34-9:38 **Paper #48: When Not to Operate in Spinal Deformity: Identifying Subsets of Patients with Simultaneous Clinical Deterioration, Major Complications, and Reoperation**
Peter G. Passias, MD; Katherine E. Pierce, BS; Renaud Lafage, MS; Virginie Lafage, PhD; D. Kojo Hamilton, MD; Gregory M. Mundis, MD; Han Jo Kim, MD; Richard Hostin, MD; Alan H. Daniels, MD; Robert A. Hart, MD; Douglas C. Burton, MD; Christopher I. Shaffrey, MD; Frank J. Schwab, MD; Christopher P. Ames, MD; Justin S. Smith, MD, PhD; Shay Bess, MD; Eric O. Klineberg, MD

9:38-9:47 **Discussion**

9:47-9:51 **Paper #49: The Effect of Intraoperative Prone Cross-table Lateral X-ray on Surgical Treatment of Adult Spinal Deformity**
Ayhan Mutlu, MD; Mustafa Eltayep, MD; Seray G. Gur, MD; Huseyin Ozturk, MD; Sinan Kahraman, MD; Tunay Sanli, MA; Selhan Karadereler, MD; Meric Enercan, MD; Azmi Hamzaoglu, MD

9:51-9:55 **Paper #50: Opioid Use Prior to Adult Spine Deformity (ASD) Surgery is Associated with Decreased Cost Effectiveness; A Matched Cohort Analysis**
Breton G. Line, BS; Shay Bess, MD; Samrat Yeramaneni, PhD; Richard Hostin, MD; Christopher P. Ames, MD; Virginie Lafage, PhD; Renaud Lafage, MS; Douglas C. Burton, MD; Eric O. Klineberg, MD; Munish C. Gupta, MD; Robert K. Eastlack, MD; Peter G. Passias, MD; Themistocles S. Protosaltis, MD; Robert A. Hart, MD; Khaled M. Kebaish, MD; Han Jo Kim, MD; Frank J. Schwab, MD; Christopher I. Shaffrey, MD; Justin S. Smith, MD, PhD

*Denotes non-CME session

Live Session Agenda - Thursday, September 10

Session times are listed in US Eastern Daylight Time.

- 9:55-9:59 **Paper #51: Recovery Kinetics of Post-operative Opiate Usage in Adult Spinal Deformity Corrective Surgery: Is There an Optimal Time Frame For Cessation?**
Waleed Ahmad, BS; Peter G. Passias, MD; Renaud Lafage, MS; Virginie Lafage, PhD; Eric O. Klineberg, MD; Michael P. Kelly, MD; Jeffrey L. Gum, MD; Breton G. Line, BS; Mitsuru Yagi, MD, PhD; Robert A. Hart, MD; Douglas C. Burton, MD; Justin S. Smith, MD, PhD; Christopher P. Ames, MD; Christopher I. Shaffrey, MD; Frank J. Schwab, MD; Richard Hostin, MD; Shay Bess, MD
- 9:59-10:08 **Discussion**
- 10:08-10:12 **Paper #52: Decompression Alone, Limited Fusion, or Full Correction of Adult Scoliosis: Outcomes and Morbidity with Minimum 2-Year Follow-Up**
Minghao Wang, MD, PhD; Gregory Hawryluk, MD; Praveen V. Mummaneni, MD; Darryl Lau, MD; Ratnesh N. Mehra, MD; Rory R. Mayer, MD; Dean Chou, MD; Bo Li, MD
- 10:12-10:16 **Paper #53: Cost Effectiveness of Adult Lumbar Scoliosis Surgery: An As-treated Analysis from the Adult Symptomatic Scoliosis Surgery Trial with Five Year Follow-Up**
Steven D. Glassman, MD; Leah Y. Carreon, MD; Christopher I. Shaffrey, MD; Michael P. Kelly, MD; Charles H. Crawford III, MD; Elizabeth L. Yanik, PhD; Jon D. Lurie, MD, MS; Shay Bess, MD; Christine Baldus, RN; Keith H. Bridwell, MD
- 10:16-10:20 **Paper #54: Adverse Events Occurring up to 5-years after Complex Adult Spinal Deformity Surgery: A Scoli-Risk-1 Analysis**
Meghan Cerpa, MPH; Scott Zuckerman, MD; Lawrence G. Lenke, MD; Zeeshan M. Sardar, MD; Eric Leung, BS; Meghana Vulapalli ; Joseph M. Lombardi, MD; Ferran Pellisé, MD, PhD; Khaled M. Kebaish, MD; Justin S. Smith, MD, PhD; Christopher I. Shaffrey, MD; Yukihiro Matsuyama, MD, PhD; Leah Y. Carreon, MD; Yong Qiu, MD; Kenneth Cheung, MD, MBBS, FRCS; Michael P. Kelly, MD; Ames P. Christopher, MD; Frank J. Schwab, MD; Oheneba Boachie-Adjei, MD
- 10:20-10:30 **Discussion**

10:30-11:35 US EDT / 22:30-23:35 CST / 16:30-17:35 CEST

Opening Ceremonies

- 10:30-10:50 **Welcome & Presidential Address**
Paul D. Sponseller, MD, MBA
- 10:50-10:52 **Announcement of Biedermann & Cotrel Award**
Paul D. Sponseller, MD, MBA
- 10:52-11:07 **Acknowledgement of Corporate Supporters**
Peter O. Newton, MD, Past President & Corporate Relations Committee Chair
- 11:07-11:10 **Acknowledgement of the 2020 Blount Humanitarian & Lifetime Achievement Award Winners**
Paul D. Sponseller, MD, MBA
- 11:10-11:12 **Introduction of Howard Steel Lecturer**
Paul D. Sponseller, MD, MBA
- 11:12-11:32 **Howard Steel Lecture: Navajo Code Talker and Former Leader of the Navajo Nation**
Peter MacDonald, Sr.
- 11:32-11:35 **Closing Remark**
Paul D. Sponseller, MD, MBA

*Denotes non-CME session

Live Session Agenda - Friday, September 11

Session times are listed in US Eastern Daylight Time.

Friday, September 11, 2020

9:00-10:40 US EDT / 21:00-22:40 CST / 15:00-16:40 CEST

Session 3: Nerves and Big Curves: Advances in Neuromonitoring and Management of Severe Spinal Deformity

Moderators: Christopher P. Ames, MD & Lawrence G. Lenke, MD & Kota Watanabe, MD, PhD

- 9:00-9:04 **Paper #109: Review of New Neurological Injuries and Prognosis Associated with Idiopathic Scoliosis Surgeries Utilizing the Scoliosis Research Society Morbidity and Mortality (SRS M&M) Database**
Swamy Kurra, MD; Harman Chopra, BS; Jinhui Shi, MD; Stephen A. Albanese, MD; Elizabeth A. Demers Lavelle, MD; William F. Lavelle, MD
- 9:04-9:08 **Paper #110: Intraoperative Neuromonitoring Practice Patterns in Spinal Deformity Surgery**
Pinar Yalinay Dikmen, MD; Altug Yucekul, MD; Matthew Halsey, MD; Irem Havlucu; Tais Zulemyan, MD; Caqlar Yilqor, MD; Ahmet Alanay, MD
- 9:08-9:12 **Paper #111: A Wireless Intraoperative Neuromonitoring System is as Reliable and Accurate as the Traditional Wired Systems for AIS Surgery**
Shi Wenyuan, PhD; J.C. Chiao, PhD; Steven P. Sparagana, MD; Patricia Rampy, CNIM; Kiley F. Poppino, BS; Daniel J. Sucato, MD, MS
- 9:12-9:21 **Discussion**
- 9:21-9:25 **Paper #112: Prospective Validation of The Spinal Cord Shape Classification System (SCSCS) to Assess the Risk of Intraoperative Neuromonitoring Data Loss with Thoracic Deformity Correction**
Meghan Cerpa, MPH; J. Alex Sielatycki, MD; Scott Zuckerman, MD; Earl D. Thuet, BS; Griffin R. Baum, MD; Zeeshan M. Sardar, MD; Paul J. Park, MD; Joseph M. Lombardi, MD; Eric Leung, BS; Meghana Vulapalli; Ronald A. Lehman, MD; Lawrence G. Lenke, MD
- 9:25-9:29 **Paper #113: How a Compressed Spinal Cord is Rejuvenated in Spinal Tuberculosis: A Case Series of Surgical Approaches on 715 Patients**
Md Shah Alam, FCPS; Sharif A. Jonayed, FCPS; Sarwar Jahan, FCPS; Abdullah Al Mamun, FCPS; O Z M Dastagir, D Ortho; Shubhendu Chakraborty, MRCS
- 9:29-9:33 **Paper #114: Better Late than Never: Neurological Outcomes of Surgical Decompression in Neglected Tuberculosis Spine with Neurodeficit**
Tushar N. Rathod, MS; Ashwin Sathe, MS; Swapnil Keny, MS; Abhinav Jogani, MS
- 9:33-9:42 **Discussion**
- 9:42-9:46 **Paper #115: The Contribution of Preoperative Halo-Pelvic Traction to Correcting Severe Rigid Scoliosis**
Kai Cao, MD, PhD; Lu Chen, MD, PhD; Honggui Yu, MD, PhD; Zhenhai Zhou, MD, PhD; Rongping Zhou, MD, PhD; Wenbing Wan, MD, PhD; Zhimin Pan, MD, PhD
Paper #116: has been withdrawn
- 9:46-9:50 **Paper #117: Intraoperative and Early Postoperative Complications After Surgery for Severe Pediatric Spinal Deformity Have a High Rate of Resolution at 2 Years but Affect Outcome Scores**
Munish C. Gupta, MD; Lawrence G. Lenke, MD; Oheneba Boachie-Adjei, MD; David B. Bumpass, MD; Mark A. Erickson, MD; Sumeet Garg, MD; Richard E. McCarthy, MD; Peter O. Newton, MD; Joshua M. Pahys, MD; Amer F. Samdani, MD; Suken A. Shah, MD; Harry L. Shufflebarger, MD; Paul D. Sponseller, MD, MBA; Daniel J. Sucato, MD, MS; Burt Yaszay, MD; Brenda A. Sides, MA; Mi . Allograft Reconstructed Iliac Bone-graft Donor Site Remodels to Viable Bone and Its Preliminary Clinical Effectiveness in Revision Fusionchael P. Kelly, MD; Fox Pediatric Spinal Deformity Study
- 9:50-9:59 **Discussion**
- 9:59-10:03 **Paper #118: Surgical Treatment of Severe Pediatric Spinal Deformity Significantly Improves Pulmonary Function**
Munish C. Gupta, MD; Lawrence G. Lenke, MD; Oheneba Boachie-Adjei, MD; David B. Bumpass, MD; Mark A. Erickson, MD; Sumeet Garg, MD; Richard E. McCarthy, MD; Peter O. Newton, MD; Joshua M. Pahys, MD; Amer F. Samdani, MD; Suken A. Shah, MD; Harry L. Shufflebarger, MD; Paul D. Sponseller, MD, MBA; Daniel J. Sucato, MD, MS; Burt Yaszay, MD; Brenda A. Sides, MA; Michael P. Kelly, MD; Fox Pediatric Spinal Deformity Study

*Denotes non-CME session

Live Session Agenda - Friday, September 11

Session times are listed in US Eastern Daylight Time.

- 10:03-10:07 **Paper #119: The Influence of Rib Resection on Pulmonary Function After Vertebral Column Resection in the Thoracic Spine**
Satoru Demura, MD, PhD; Satoshi Kato, PhD; Kazuya Shinmura, PhD; Noritaka Yonezawa, MD; Takaki Shimizu, MD; Norihiro Oku, MD; Ryo Kitagawa, MD; Makoto Handa, MD; Ryohei Annen, MD; Hiroyuki Tsuchiya, PhD
- 10:07-10:11 **Paper #120: Vertebral Column Resection by Concave Pedicle Drilling in Severe Kyphoscoliosis**
Anjaneyulu R. Devireddy, MBBS, MS; Bijjawara H Mahesh, MBBS, MS; Bidre Upendra, MBBS, MS; Raghavendra Rao, MBBS, MS; Ravi Varma VN, MBBS, MS
- 10:11-10:20 **Discussion**
- 10:20-10:24 **Paper #121: Medical Complications and Health Related Quality of Life in Complex Pediatric Spine Deformities Exceeding 100 Degrees or Treated By 3CO.**
Kwadwo Poku Yankey, MD; Henry Ofori Duah, MPH; Arthur Sackeyfio, MD; Lawrence G. Lenke, MD; Paul D. Sponseller, MD, MBA; Suken A. Shah, MD; Mark A. Erickson, MD; Brenda A. Sides, MA; Peter O. Newton, MD; David B. Bumpass, MD; Irene Wulff, MD; Munish C. Gupta, MD; Oheneba Boachie-Adjei, MD
- 10:24-10:28 **Paper #122: Reducing Revision Rates following 3-Column Osteotomy Surgery:A Single-Center Experience of Trends Over Seven Years**
Tanvir J. Bari, MD; Dennis W. Hallager, MD, PhD; Lars V. Hansen, MD; Benny T. Dahl, DMSc; Martin Gehrchen, MD, PhD
- 10:28-10:40 **Discussion**

10:40-11:15 US EDT / 22:40-23:15 CST / 16:40-17:15 CEST

Harrington Lecture

- 10:40-10:45 **Harrington Lecture Introduction**
Paul D. Sponseller, MD, MBA
- 10:45-11:15 **Harrington Lecture: The Respiratory Impact of Early Onset Scoliosis and Current Treatments: Where Do We Go From Here?**
Gregory J. Redding, MD

*Denotes non-CME session

Live Session Agenda - Saturday, September 12

Session times are listed in US Eastern Daylight Time.

Saturday, September 12, 2020

9:00-9:40 US EDT / 21:00-21:40 CST / 15:00-15:40 CEST

Session 4A: Hibbs Basic Science Research Award Nominees

Moderators: A. Noelle Larson, MD & Stefan Parent, MD, PhD & Ferran Pellisé, MD, PhD

- 9:00-9:04 **Welcome**
Lindsay M. Andras, MD
- 9:04-9:08 **Paper #55: Genetic Prediction of Onset and Progression of Adolescent Idiopathic Scoliosis**
Nao Otomo, MD; Kazuki Takeda, MD, PhD; Yoji Ogura, MD, PhD; Yohei Takahashi, MD, PhD; Shohei Minami, MD, PhD; Koki Uno, MD, PhD; Noriaki Kawakami, MD, PhD; Manabu Ito, MD, PhD; Kei Watanabe, MD, PhD; Takashi Kai-to, MD, PhD; Hiroshi Taneichi, MD, PhD; Katsumi Harimaya, MD, PhD; Yuki Taniguchi, MD, PhD; Hideki Shigematsu, MD, PhD; Takahiro Iida, MD, PhD; Satoru Demura, MD, PhD; Ryo Sugawara, MD, PhD; Nobuyuki Fujita, MD, PhD; Mitsuru Yagi, MD, PhD; Eijiro Okada, MD, PhD; Naobumi Hosogane, MD, PhD; Kazuhiro Chiba, MD, PhD; Toshiaki Kotani, MD, PhD; Tsuyoshi Sakuma, MD, PhD; Tsutomu Akazawa, MD, PhD; Teppei Suzuki, MD, PhD; Kotaro Nishida, MD, PhD; Kenichiro Kakutani, MD, PhD; Taichi Tsuji, MD, PhD; Tatsuya Sato, MD, PhD; Satoshi Inami, MD, PhD; Masaya Nakamura, MD, PhD; Morio Matsumoto, MD, PhD; Shiro Ikegawa, MD, PhD; Chikashi Terao, MD, PhD; Kota Watanabe, MD, PhD
- 9:08-9:12 **Paper #56: Correlation of Collagen X Biomarker (CXM) with Peak Height Velocity and Radiographic Measures of Growth in Idiopathic Scoliosis**
Michelle C. Welborn, MD; Ryan Coghlan, MS; James O. Sanders, MD; Vishwas R. Talwalkar, MD; Amer F. Samdani, MD; Joseph Stone, MD; Daniel Bouton, MD; William Horton, MD; Susan Sienko, PhD
- 9:12-9:16 **Paper #57: Does Implant Density Matter in the Surgical Outcomes of Severe Kyphoscoliosis Exceeding 100 Degrees or Treated by 3CO?**
Oheneba Boachie-Adjei, MD; Henry Ofori Duah, MPH; Arthur Sackeyfio, MD; Kwadwo Poku Yankey, MD; Lawrence G. Lenke, MD; Paul D. Sponseller, MD, MBA; Amer F. Samdani, MD; Daniel J. Sucato, MD, MS; Brenda A. Sides, MA; Peter O. Newton, MD; Suken A. Shah, MD; Harry Akoto, MD; Munish C. Gupta, MD
- 9:16-9:25 **Discussion**
- 9:25-9:29 **Paper #58: A Novel Imaging Study to Quantify Respiratory Function in Early Onset Scoliosis-Introducing Quantitative Dynamic Magnetic Resonance Imaging (QdMRI)**
Yubing Tong, PhD; Jayaram K. Udupa, PhD; Joseph M. McDonough, MS; Caiyun Wu, MS; Catherine Qiu, MS; Carina Lott, MS; Nirupa Galagedera, BA; Jason B. Anari, MD; Drew A. Torigian, MA; Patrick J. Cahill, MD
- 9:29-9:33 **Paper #59: Prospective Study of Intraoperative MEP Monitoring to Identify Lumbosacral Nerve Root Motor Deficits**
Kelley Wichman, BS; Hyunmi Choi, MD; Anil Mendiratta, MD; Earl D. Thuet, BS; Paul Kent, MD; Meghan Cerpa, MPH; Ronald A. Lehman, MD; Lawrence G. Lenke, MD
- 9:33-9:40 **Discussion**

9:40-10:50 US EDT / 21:40-22:50 CST / 15:40-16:50 CEST

Session 4B: Hibbs Clinical Science Research Award Nominees

Moderators: Lindsay M. Andras, MD & Peter O. Newton, MD & Colin Nnadi, FRCS (Orth)

- 9:40-9:44 **Paper #60: Moderate Scoliosis Continues to Progress at 30-Year Follow-Up. A Call for Concern?**
Christopher Alcalá, MD; Amir A. Mehbod, MD; Francis Denis, MD; Timothy A. Garvey, MD; Joseph H. Perra, MD; Ensor E. Transfeldt, MD
- 9:44-9:48 **Paper #61: Complications Following Posterior Surgical Treatment of Adolescent Idiopathic Scoliosis: Prospective 10-Year Follow-Up Study**
Arun R. Hariharan, MD; Suken A. Shah, MD; Margaret Baldwin, MD; Joseph Petfield, MD; Burt Yaszay, MD; Peter O. Newton, MD; Baron Lonner, MD; Firoz Miyanji, MD; Paul D. Sponseller, MD, MBA; Amer F. Samdani, MD
- 9:48-9:54 **Discussion**

*Denotes non-CME session

Live Session Agenda - Saturday, September 12

Session times are listed in US Eastern Daylight Time.

- 9:54-9:58 **Paper #62: Comparison of Clinical and Functional Outcomes of Vertebral Body Tethering to Posterior Spinal Fusion in Patients with Adolescent Idiopathic Scoliosis and Evaluation of Quality of Life**
Tuna Pehlivanoglu, MD; Ismail Oltulu, MD; Emre Korkmaz, MD; Yigit Erdag, MD; Ender Sarioglu, MD; Ender Ofluoglu, MD; Mehmet Aydogan, MD
- 9:58-10:02 **Paper #63: Anterior Vertebral Body Tethering in Idiopathic Scoliosis: A Prospective, Multicenter Analysis**
Firoz Miyanji, MD; Paul R. Rushton, FRCS; Isabelle Turgeon, BSc; Luigi A. Nasto, MD; Jeff Pawelek, BS; Stefan Parent, MD, PhD
- 10:02-10:06 **Paper #64: Spring Distraction System to Correct Early Onset Scoliosis: 2-Year Follow-Up Results From 22 Patients.**
Justin V. Lemans, MD; Sebastiaan P. Wijdicks, MD; René M. Castelein, MD, PhD; Moyo C. Kruyt, MD, PhD
- 10:06-10:15 **Discussion**
- 10:15-10:19 **Paper #65: Operative Versus Nonoperative Treatment for Adult Symptomatic Lumbar Scoliosis at 5-6 Year Follow-Up: Outcomes and Impact of Related Serious Adverse Events**
Justin S. Smith, MD, PhD; Michael P. Kelly, MD; Elizabeth L. Yanik, PhD; Christine Baldus, RN; Thomas J. Buell, MD; Jon D. Lurie, MD, MS; Charles C. Edwards, MD; Steven D. Glassman, MD; Lawrence G. Lenke, MD; Oheneba Boachie-Adjei, MD; Jacob M. Buchowski, MD; Leah Y. Carreon, MD; Charles H. Crawford III, MD; Stephen J. Lewis, MD, FRCS(C); Tyler Koski, MD; Stefan Parent, MD, PhD; Virginie Lafage, PhD; Munish C. Gupta, MD; Han Jo Kim, MD; Christopher P. Ames, MD; Shay Bess, MD; Frank J. Schwab, MD; Christopher I. Shaffrey, MD; Keith H. Bridwell, MD
- 10:19-10:23 **Paper #66: Realistic Radiographic Lordosis Achieved in Pedicle Subtraction Osteotomies (PSO) and 3-Level Posterior Column Osteotomies (PCO) in Adult Spinal Deformity (ASD) Patients with 2-Year Follow-Up**
Joshua Rivera; Praveen V. Mummaneni, MD; Jeremy Guinn, BS; Hao-Hua Wu, MD; Minghao Wang, MD, PhD; Pingguo Duan, MD; Zhuo Xi, MD; Bo Li, MD; Rory R. Mayer, MD; Shane Burch, MD; Sigurd H. Berven, MD; Dean Chou, MD
- 10:23-10:27 **Paper #67: Quality Metrics in Adult Spinal Deformity (ASD) Surgery Over the Last Decade: A Combined Analysis of the Largest Prospective Multicentric Datasets**
Ferran Pellisé, MD, PhD; Miquel Serra-Burriel, PhD; Alba Vila-Casademunt, MS; Justin S. Smith, MD, PhD; Ibrahim Obeid, MD; Douglas C. Burton, MD; Frank S. Kleinstueck, MD; Shay Bess, MD; Javier Pizones, MD, PhD; Virginie Lafage, PhD; Francisco Javier S. Perez-Grueso, MD; Frank J. Schwab, MD; Jeffrey L. Gum, MD; Eric O. Klineberg, MD; Christopher I. Shaffrey, MD; Ahmet Alanay, MD; Christopher P. Ames, MD
- 10:27-10:36 **Discussion**
- 10:36-10:40 **Paper #68: Automated Measurement of Spinopelvic Parameters on Lateral Lumbar Radiographs Using Deep Learning**
John T. Schwartz, BS; Varun Arvind, BS; Brian H. Cho, BS; Aly A. Valliani, BS; Eric Geng, BS; Peter Tang, MD; Jun Kim, MD; Samuel K. Cho, MD
- 10:40-10:44 **Paper #69: Outcomes of Neurologic Deficit and Use of Intraoperative Neuromonitoring for Lower Cervical and Upper Thoracic Three Column Osteotomies for Deformity Correction**
Darryl Lau, MD; Alexander Haddad, BS; Vedat Deviren, MD; Christopher P. Ames, MD
- 10:44-10:50 **Discussion**

10:50-11:30 US EDT / 22:50-23:30 CST / 16:50-17:30 CEST

2021 Preview, Scientific Awards & Transfer of Presidency*

- 10:50-10:54 **2021 IMAST Preview**
David L. Skaggs, MD, MMM
- 10:54-10:58 **2021 Annual Meeting Preview**
Michael P. Kelly, MD
- 10:58-11:05 **Scientific Award Presentations: Russell A. Hibbs, Louis A. Goldstein, John H. Moe**
Presented by: Lindsay M. Andras, MD
- 11:05-11:10 **Introduction of the 2021 President**
Paul D. Sponseller, MD, MBA

*Denotes non-CME session

Live Session Agenda - Saturday, September 12

Session times are listed in US Eastern Daylight Time.

11:10-11:30 **Transfer of Presidency**
Muharrem Yazici, MD

11:30-12:40 US EDT / 23:30-00:40 CST / 17:30-18:40 CEST

Early Career Surgeons Session*

The Early Career Surgeons Session is supported, in part, by a grant from Medtronic.

Discussion Leaders: Kariman Abelin-Genevois, MD, PhD; Laurel C. Blakemore, MD; Louis Boissiere, MD; Robert H. Cho, MD; Kenny Kwan, BMBCh(Oxon), FRCSEd; Javier Pizones, MD, PhD; Christopher I. Shaffrey, MD; Brian G. Smith, MD; Justin S. Smith, MD; Paul D. Sponseller MD, MBA; Muharrem Yazici, MD; Caglar Yilgor, MD

11:30-11:40 **Introduction to Early Career Surgeon's Program**
Paul D. Sponseller, MD, MBA

11:40-11:55 **Case Discussion: Selective Thoracic Fusion**
Altug Yucekul, MD

11:55-12:10 **Case Discussion: T10-Pelvis Fusion**
Pierre Grobost, MD

12:10-12:25 **Case Discussion: Single Level Lumbar Stenosis**
Timothy O'Connor, MD

12:25-12:40 **Details of SRS Mentorship Program**
Brian G. Smith, MD

*Denotes non-CME session

Live Session Agenda - Sunday, September 13

Session times are listed in US Eastern Daylight Time.

Sunday, September 13, 2020

9:00-11:00 US EDT / 21:00-23:00 CST / 15:00-17:00 CEST

Half-Day Course 1: Optimizing Value and Minimizing Complications in Adult Spinal Deformity Surgery: The Roles of Teams, Risk Stratification, and Technology (*Runs Concurrently with Half-Day Course 2*)

Course Chairs: Han Jo Kim, MD; Rajiv K. Sethi, MD & Mark Weidenbaum, MD

Section 1: Methods for Improving Care

Moderators: Rajiv K. Sethi, MD & Mark Weidenbaum, MD

- 9:00-9:03 **Safety and Value in ASD Surgery in 2020. Where Are We?**
Rajiv K. Sethi, MD
- 9:03-9:08 **What Are the Current Definitions of Risk Stratification Debate: Committee Better than Computer**
Jean-Christophe A. Leveque, MD
- 9:08-9:13 **What Are the Current Definitions of Risk Stratification Debate: Computer Better than Committee**
Ferran Pellisé, MD, PhD
- 9:13-9:18 **Methods Used for Pre-operative Optimization at a Tertiary Spine Center in the United States**
David W. Polly Jr., MD
- 9:18-9:23 **Is It All About Pre-op Optimization? How About Intra-operative and Post-operative Strategies**
Khaled M. Kebaish, MD
- 9:23-9:27 **Moderator Led Discussion**
Rajiv K. Sethi, MD
- 9:27-9:38 **Panel Discussion: Obstacles to Risk Stratification in a Large Medical Center**
Moderator: Mark Weidenbaum, MD
Panelists: Christopher P. Ames, MD; Benny T. Dahl, MD, PhD, DMSci; Eric O. Klineberg, MD; Dominique A. Rothenfluh, MD, PhD

Section 2: Multidisciplinary Approaches to Risk Mitigation

Moderators: Han Jo Kim, MD & Rajiv K. Sethi, MD

- 9:38-9:43 **Building and Advocating Dedicated Spine Teams: Anesthesia and OR**
Lawrence G. Lenke, MD
- 9:43-9:48 **Building and Advocating Dedicated Spine Teams: Medical**
Marinus de Kleuver, MD, PhD
- 9:48-9:53 **Own the Bone: The Importance of Osteoporosis Management Prior to Adult Spinal Deformity**
John R. Dimar II, MD
- 9:53-9:58 **How Do You Form a Standard Work Protocol and Make it the Language of the Team?**
Douglas C. Burton, MD
- 9:58-10:02 **Moderator Led Discussion**
Han Jo Kim, MD
- 10:02-10:13 **Panel Discussion: Obstacles We Have Faced in the Formation of Dedicated Teams**
Moderator: Han Jo Kim, MD
Panelists: Todd J. Albert, MD; John P. Dormans, MD; Morio Matsumoto, MD, PhD; Venu M. Nemani, MD, PhD; Paul D. Sponseller, MD, MBA

Section 3: Technology and Safety: Often at Odds?

Moderators: Rajiv K. Sethi, MD & Mark Weidenbaum, MD

- 10:13-10:18 **Free-Hand Placement of Pedicle Screws Will Always Be the Gold Standard**
Peter O. Newton, MD
- 10:18-10:23 **Current State of Robotics and Navigation at a Large Center: USA**
Frank J. Schwab, MD

*Denotes non-CME session

Live Session Agenda - Sunday, September 13

Session times are listed in US Eastern Daylight Time.

- 10:23-10:28 **Current State of Robotics and Navigation at a Large Center: Japan**
Kota Watanabe, MD, PhD
- 10:28-10:33 **Occupational Risks in Spinal Surgery: Will Technology Help Us Reduce Intraoperative Overuse Injuries and Radiation Risks**
Baron S. Lonner, MD
- 10:33-10:38 **Is Robotics and Navigation Possible in the Developing World with Cost Pressures?**
Sajan K. Hegde, MD
- 10:38-10:42 **Moderator Led Discussion**
Mark Weidenbaum, MD
- 10:42-10:58 **Panel Discussion: How Do I Justify Adding Expensive Technology to Hospital Administrators?**
Moderator: Rajiv K. Sethi, MD
Panelists: Meric Enercan, MD; Christopher I. Shaffrey Sr., MD; Michael G. Vitale, MD, MPH; Vijay Yanamadala, MD
- 10:58-11:00 **Close and Final Comments**
Han Jo Kim, MD; Rajiv K. Sethi, MD; Mark Weidenbaum, MD

9:00-11:00 US EDT / 21:00-23:00 CST / 15:00-17:00 CEST

Half-Day Course 2: Non-Fusion Scoliosis Correction in the Treatment of AIS: Fundamentals and Future (Runs Concurrently with Half-Day Course 1)

Course Chairs: Baron S. Lonner, MD; Firoz Miyanji, MD; Peter O. Newton, MD; Amer F. Samdani, MD

Moderators: Baron S. Lonner, MD & Peter O. Newton, MD

- 9:00-9:05 **Introduction and Patient's Perspective**
Baron S. Lonner, MD
- 9:05-9:10 **Growth Modulation: Developing the Basic Science Case**
John T. Braun, MD
- 9:10-9:15 **Regulatory Requirements in the United States**
Patrick J. Cahill, MD
- 9:15-9:20 **Indications for VBT**
A. Noelle Larson, MD
- 9:20-9:25 **Simulating/Predicting Growth Modulation**
Stefan Parent, MD, PhD
- 9:25-9:35 **Discussion**
Moderators: Ahmet Alanay, MD & Amer F. Samdani, MD
- 9:35-9:40 **Video Review: Anterior and Thoracoscopic Surgical Approach**
Randal R. Betz, MD
- 9:40-9:45 **VBT Basics of the Implants and Technical Considerations**
Firoz Miyanji, MD, FRCSC
- 9:45-9:50 **VBT Outcomes**
Amer F. Samdani, MD
- 9:50-9:55 **VBT Complications: What Happens When Things Go Bad?**
Peter O. Newton, MD
- 9:55-10:05 **Discussion**
Moderators: Firoz Miyanji, MD, FRCSC & Per D. Trobisch, MD
- 10:05-10:10 **Indications, Rationale, and Current Evidence for Posterior Dynamic Distraction**
Biren Desai, MD
- 10:10-10:15 **Complications of PDD and Technique Tips to Avoid**
Ron El-Hawary, MD

*Denotes non-CME session

Live Session Agenda - Sunday, September 13

Session times are listed in US Eastern Daylight Time.

10:15-10:20

Discussion

10:20-11:00

Case Presentations for Fusion, PDD, and Tether

Panelists: Ahmet Alanay, MD; Randal R. Betz, MD; John T. Braun, MD; Biren Desai, MD; Ron El-Hawary, MD; A. Noelle Larson, MD; Baron S. Lonner, MD; Peter O. Newton, MD; Stefan Parent, MD, PhD; Amer F. Samdani, MD; Daniel J. Sucato, MD, MS

Self-Paced Program

September 3-December 31, 2020

Self-paced content will be available to all registered attendees through December 31, 2020. Once all content in the self-paced program is completed, additional CME can be claimed.

Pre-Meeting Course Supplement

Section 2: Practice Management and Managing Practice

Moderators: Stefan Parent, MD, PhD & Burt Yaszay, MD

How We Deal with Complications: To Err is Human

David S. Marks, FRCS, FRCS(Orth)

Organizing a Team Panel: How It Changed My Practice

Moderator: Stefan Parent, MD, PhD

Panelists: John M. Flynn, MD; David S. Marks, FRCS, FRCS(Orth); Firoz Miyanji, MD, FRCSC; David L. Skaggs, MD, MMM

Section 3: Resource Management Panel: Accessing Tools and Infrastructure for the Patient

Moderators: Brian Hsu, MD & Baron S. Lonner, MD

The Indian Experience

S. Rajasekaran, MD, FRCS, MCh, PhD

The LA Experience

David L. Skaggs, MD, MMM

Managing the Patient Without ICU

Daniel J. Sucato, MD, MS

The Brazilian Experience

Olavo Biraghi Letaif, MD, MSc

Setting Up a Hospital in a Developing Country

Oheneba Boachie-Adjei, MD, DSc

Telemedicine in the Age of COVID-19

Suken A. Shah, MD

HALF-DAY COURSE ABSTRACT SUPPLEMENT (ADULT)

Moderators: Rajiv K. Sethi, MD

The Patient Demographics, Radiographic Index, and Surgical Invasiveness for Mechanical Failure (PRISM) Model Established for Adult Spinal Deformity Surgery

Mitsuru Yagi, MD, PhD; Satoshi Suzuki, MD, PhD; Eijiro Okada, MD, PhD; Satoshi Nori, MD, PhD; Osahiko Tsuji, MD, PhD; Narihito Nagoshi, MD, PhD; Nobuyuki Fujita, MD, PhD; Naobumi Hosogane, MD, PhD; Masaya Nakamura, MD, PhD; Morio Matsumoto, MD, PhD; Kota Watanabe, MD, PhD

Artificial Intelligence Clustering of Adult Spinal Deformity Morphology Predicts Surgical Characteristics, Alignment, and Outcomes

Wesley M. Durand, BS; Renaud Lafage, MS; D. Kojo Hamilton, MD; Peter G. Passias, MD; Han Jo Kim, MD; Themistocles S. Protopsalitis, MD; Virginie Lafage, PhD; Justin S. Smith, MD, PhD; Christopher I. Shaffrey, MD; Munish C. Gupta, MD; Eric O. Klineberg, MD; Frank J. Schwab, MD; Jeffrey L. Gum, MD; Gregory M. Mundis, MD; Robert K. Eastlack, MD; Khaled M. Kebaish, MD; Alex Soroceanu, MPH; Richard Hostin, MD; Douglas C. Burton, MD; Shay Bess, MD; Christopher P. Ames, MD; Robert A. Hart, MD; Alan H. Daniels, MD

Enhanced Perioperative Protocols Can Improve Infection Outcomes in Adult Spinal Deformity (ASD) Surgery

Suzanne E. Kent, BS; Daniel Kent; Brian Hollenbeck, MD; Samuel Golenbock, MS; Stephen Camer, MD; Frank Rand, MD

The Impact of Metabolic Disorders of Bone Mineralization on Long Term Outcomes Following Surgery for Adult Spinal Deformity Surgery: Analysis of 2-year Surveillance

Bassel G. Diebo, MD; George A. Beyer, MS; Alexander Rompala, BS; Neil V. Shah, MD, MS; Adam J. Wolfert, BS; Frank A. Segreto, BS; Salem Najjar, BA; Peter G. Passias, MD; Frank J. Schwab, MD; Virginie Lafage, PhD; Carl B. Paulino, MD

Not So Sweet: Determining Hemoglobin A1C Cut-offs in Diabetic Patients Prior to Posterior Spinal Fusion

Nicholas A. O'Malley, BS; Charmie Mehta, BS; Eaman Balouch, MD, PhD; Carolyn Stickley, BS; Jack R. Zhong, BS; Carlos Leon, BE; Constance Maglaras, PhD; Aaron J. Buckland, MBBS, FRCSA

Self-Paced Program

September 3-December 31, 2020

Self-paced content will be available to all registered attendees through December 31, 2020. Once all content in the self-paced program is completed, additional CME can be claimed.

Complication Rate in Obese vs Non-Obese Patients Undergoing Minimally Invasive Surgery for Correction of Adult Spinal Deformity: Evaluation of 2 Year Prospective Data

Richard G. Fessler, MD; Kai-Ming Gregory Fu, MD; Paul Park, MD; Dean Chou, MD; Robert K. Eastlack, MD; Gregory M. Mundis, MD; Khoi D. Than, MD; Neel Anand, MD; David O. Okonkwo, MD; Michael Y. Wang, MD; Adam S. Kanter, MD; Pierce D. Nunley, MD; Praveen V. Mummaneni, MD

High Radiation Burden of Minimally Invasive Approaches for Adult Spinal Deformity

Jakub Godzik, MD; Gregory M. Mundis, MD; Jay D. Turner, MD; Juan S. Uribe, MD; Robert K. Eastlack, MD

3D-Printed Spine Model Improves the Efficiency and Safety of the Severe Congenital Spine Deformity Correction Surgery

Yong Hai, MD, PhD; Hongtao Ding, MS; Aixing Pan, MD, PhD

Power-Assisted Pedicle Screw Technique Protects Against Risk of Surgeon Overuse Injury: A Real-Time EMG Study

David L. Skaggs, MD; Amy A. Claeson, PhD; Frank J. Schwab, MD; Anup A. Gandhi, PhD

HALF-DAY COURSE ABSTRACT SUPPLEMENT (PEDIATRIC)

Moderators: Baron S. Lonner, MD, Firoz Miyajji, MD, FRCSC, Peter O. Newton, MD & Per D. Trobisch, MD

Does Intraoperative Correction during Anterior Vertebral Body Tethering Predict Correction Seen on 1st Erect Radiograph?

Abdul Fattah Buyuk, MD; Todd A. Milbrandt, MD, MS; Smitha Mathew, MBBS, MS; D. Dean Potter, MD; A. Noelle Larson, MD

Rate of Scoliosis Correction Correlates with Height Velocity and Slows Substantially at 2 Years After Anterior Spinal Growth Tethering (ASGT) for AIS

Yohei Takahashi, MD, PhD; Wataru Saito, MD, PhD; Burt Yaszay, MD; Carrie E. Bartley, MA; Tracey P. Bastrom, MA; Peter O. Newton, MD

The Clinical Significance of Tether Breakages in Anterior Vertebral Body Growth Modulation: A Two-Year Post-Operative Analysis

Jesse Shen, MSc; Julie Joncas, RN; Marjolaine Roy-Beaudry, MSc; Isabelle Turgeon, BSc; Imad S. Nahle, MD; Stefan Parent, MD, PhD

Vertebral Body Tethering Compared to the Gold Standard Spinal Fusion: Matched Analysis 2 Years Post-Operatively

Lily Q. Eaker, BA; Jonathan S. Markowitz, MD; Baron Lonner, MD

Anterior Vertebral Body Tethering for Adolescent Idiopathic Scoliosis Preserves Trunk Motion Compared to Posterior Spinal Fusion at Two Year Follow-Up

Joshua M. Pahys, MD; Amer F. Samdani, MD; Steven W. Hwang, MD; Spencer Warshauer, MS; Ross Chafetz, PhD

Comparative Analysis of Post-op Motion between Spinal Fusion and VBT

Firoz Miyajji, MD; Michelle Claire Marks, PT; Amer F. Samdani, MD; Suken A. Shah, MD; Maty Petcharaporn, BS; Tracey P. Bastrom, MA; Peter O. Newton, MD

Anterior Vertebral Body Tethering for Immature Idiopathic Scoliosis: Results on Patients Reaching Skeletal Maturity

Amer F. Samdani, MD; Joshua M. Pahys, MD; Solomon Samuel, D. Eng.; Erica Johnson, BS; Alejandro Quinonez, BS; Glenn Pelletier, MD; Harsh Grewal, MD; Steven W. Hwang, MD

Shoulder Balance in Lenke Type 1 and 2 Idiopathic Scoliosis Following Anterior Vertebral Body Tethering of the Spine

Firoz Miyajji, MD; Michael G. Vitale, MD; Ron El-Hawary, MD; Joshua S. Murphy, MD; Michael Fields, BS; Hiroko Matsumoto, PhD; David L. Skaggs, MD; Stefan Parent, MD, PhD

Reoperations after Anterior Vertebral Body Tethering: Analysis of a Cohort of 218 Patients

Amer F. Samdani, MD; Joshua M. Pahys, MD; Solomon Samuel, D. Eng.; Erica Johnson, BS; Alejandro Quinonez, BS; Firoz Miyajji, MD; Steven W. Hwang, MD

Session 3: Adolescent Idiopathic Scoliosis II

Moderators: John Flynn, MD & Masayuki Ohashi, MD

Paper #28: Three Dimensional Changes are Predictors of Brace Effectiveness in Patients with Idiopathic Scoliosis

Kenny Kwan, MD; Amy Cheung, BA; Kenneth Cheung, MD, MBBS, FRCS

Paper #29: In-Brace Axial Rotation Magnitude and Improvement is Associated with Lower Rates of Curve Progression in AISr

Matthew E. Simhon, BS; Hiroko Matsumoto, PhD; Michael Fields, BS; Gerard F. Marciano, MD; Afrain Boby, MS, BS; Benjamin D. Roye, MD; Michael G. Vitale, MD

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Paper #30: Realities of a Multi-Site Randomized Schroth-Based Trial for AIS <25°r

Karina Zapata, DPT; Rebecca J. Dieckmann, BS; Steven D. Glassman, MD; Michael T. Hresko, MD; Brian G. Smith, MD; Paul D. Sponseller, MD, MBA; Michael G. Vitale, MD; Daniel J. Sucato, MD, MS

Paper #31: Variability in Anesthetic Practices in Surgical Treatment of Adolescent Idiopathic Scoliosis

Niyathi Prasad, BS; Majd Marrache, MD; Dolores Njoku, MD; Paul D. Sponseller, MD, MBA; Amit Jain, MD

Paper #32: Bone Graft Substitutes and Extenders are Associated with a Higher Rate of Wound Complications

Dhananjay Bansal, BS; Majd Marrache, MD; Paul D. Sponseller, MD, MBA; Suken A. Shah, MD; Amer F. Samdani, MD; Patrick J. Cahill, MD; Baron Lonner, MD; Michelle Claire Marks, PT; Peter O. Newton, MD; Thomas J. Errico, MD; Amit Jain, MD

Paper #33: Sinister! The High Preop Left Shoulder is Less Likely to be Balanced at 2 Years Postop

Joshua T. Bram, BS; Nishank Mehta, BA; Jason B. Anari, MD; Burt Yaszay, MD; Joshua M. Pahys, MD; Harms Study Group; Patrick J. Cahill, MD

Paper #34: Selective vs. Non-Selective Thoracic Fusion for Lenke Type 1-4C Curves: Which Has More Complications at 5-Year Follow-Up?

Jay S. Reidler, MD; Scott Zuckerman, MD; Joseph M. Lombardi, MD; Jun Kim, MD; Andrew C. Vivas, MD; Meghan Cerpa, MPH; Peter O. Newton, MD; Lawrence G. Lenke, MD

Paper #35: Preoperative LIV Translation and LIV Tilt are Risk Factors for Adding-On in Lenke 1/2AR Curves

Brendon Mitchell, MD; David L. Skaggs, MD; Lawrence G. Lenke, MD; Tracey P. Bastrom, MA; Carrie E. Bartley, MA; Peter O. Newton, MD

Paper #36: Fusions Ending Above The Sagittal Stable Vertebrae in Adolescent Idiopathic Scoliosis: Does it Matter?

Dale Segal, MD; Keith Orland, MD; Eric Yoon, BS; Tracey P. Bastrom, MA; Harms Study Group, N/A; Nicholas D. Fletcher, MD

Paper #37: Sagittal Considerations and Implications in Lenke 5 Curves

Majd Marrache, MD; Patrick J. Cahill, MD; Baron Lonner, MD; Peter O. Newton, MD; Paul D. Sponseller, MD, MBA

Paper #38: Surgical Treatment of Lenke Type 5 Curves Using Vertebral Body Tethering with Double Screw-Double Cord Fixation. Radiological and Clinical Outcomes.

Azmi Hamzaoglu, MD; Mustafa Eltayep, MD; Huseyin Ozturk, MD; Seray G. Gur, MD; Ayhan Mutlu, MD; Sinan Kahraman, MD; Tunay Sanli, MA; Selhan Karadereler, MD; Meric Enercan, MD

Paper #39: Coronal and Sagittal Parameters that Affect Disc and Facet Joint Degeneration in Lenke 5 Curves after Selective Posterior Lumbar Fusion: a MRI Study with 10-Year Follow-up

Seray G. Gur, MD; Mustafa Eltayep, MD; Huseyin Ozturk, MD; Tunay Sanli, MA; Ayhan Mutlu, MD; Selhan Karadereler, MD; Tom Reinsele, MD; Sinan Kahraman, MD; Meric Enercan, MD; Azmi Hamzaoglu, MD

Paper #40: Junctional Segment Degeneration 20 Years Following Posterior Instrumented Fusion for Adolescent Idiopathic Scoliosis (AIS): Comparative Analysis of Lumbar Vertebral Tilt, Sagittal Balance and Patient Outcome.

Isobella Henzell, MBBS; Kenan Burrows, MBBS; Bruce F. Hodgson, MBBS, FRCS; Ginny Martin, RN

Paper #41: Repeat Surgical Interventions Following “Definitive” Instrumentation and Fusion for Idiopathic Scoliosis: A 30-Year Update

William Z. Morris, MD; Kiley F. Poppino, BS; Dong-Phuong Tran, MS; Brandon A. Ramo, MD; B. Stephens Richards, MD

Paper #42: Ultralong Follow-Up of Spinal Fusion for Adolescent Idiopathic Scoliosis: Harrington Instrumentation Versus Uninstrumented Fusion. Minimum 53-Year Follow-Up

Noorullah Maqsoodi, MS; Aron Sulovari, BS; Adan Omar, MD; Jarren Section, MD; Emmanuel N. Menga, MD; James O. Sanders, MD; Paul T. Rubery, MD; Addisu Mesfin, MD

Session 6: Cervical Deformity

Moderators: Michael P. Kelly, MD & Suken Shah, MD

Paper #70: Postoperative Axial Neck Pain (ANP) and its Associated Radiographic Parameters in the Surgically Treated AIS Patients

Akira Matsumura, MD, PhD; Takashi Namikawa, MD, PhD; Yusuke Hori, MD

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Paper #71: Restoration of Thoracic Kyphosis and Higher T1 Slope Angle Impacts Cervical Alignment after Posterior Spinal Fusion in Hypokyphotic Adolescent Idiopathic Scoliosis: A Retrospective Study with Minimum Five-year Follow-Up

Ayhan Mutlu, MD; Mustafa Eltayep, MD; Seray G. Gur, MD; Huseyin Ozturk, MD; Tunay Sanli, MA; Selhan Karadereler, MD; Tom Reinseel, MD; Meric Enercan, MD; Sinan Kahraman, MD; Azmi Hamzaoglu, MD

Paper #72: Cervical Radiographic Parameters and Patient Reported Outcomes Following Harrington Instrumentation: A Minimum 35-Year Follow-Up

Noorullah Maqsoodi, MS; Aron Sulovari, BS; Adan Omar, MD; Jarren Section, MD; Emmanuel N. Menga, MD; Paul T. Rubery, MD; Addisu Mesfin, MD

Paper #73: More Than 10-Year Clinical Outcome After Pedicle Screw Fixation for Cervical Kyphosis in Athetoid Cerebral Palsy Patients.

Satoru Demura, MD, PhD; Satoshi Kato, PhD; Kazuya Shinmura, PhD; Noritaka Yonezawa, MD; Takaki Shimizu, MD; Norihiro Oku, MD; Ryo Kitagawa, MD; Makoto Handa, MD; Ryohei Annen, MD; Hiroyuki Tsuchiya, PhD

Paper #74: The Surgical Treatment of Severe Cervical Kyphosis in Diastrophic Dysplasia

John Heydemann, MD; William G. Mackenzie, MD; Colleen Ditro, RN, DNP, CPNP; Kenneth J. Rogers, PhD; Jeffrey Campbell, MD; Suken A. Shah, MD; William G. Mackenzie, MD

Paper #75: Radiological and Clinical Outcome of Surgery for Basilar Invagination: What Holds the Key to Success in this Difficult Terrain

Shardul Soman, MBBS, MS

Paper #76: When Can we Expect Global Sagittal Alignment to Reach a Stable Value Following Cervical Deformity Surgery?

Renaud Lafage, MS; Justin S. Smith, MD, PhD; Christopher P. Ames, MD; Peter G. Passias, MD; Christopher I. Shaffrey, MD; Gregory M. Mundis, MD; Themistocles S. Protopsaltis, MD; Munish C. Gupta, MD; Eric O. Klineberg, MD; Jonathan Elysee, MS; Han Jo Kim, MD; Shay Bess, MD; Frank J. Schwab, MD; Virginie Lafage, PhD

Paper #77: Failure Mechanisms and Revision Strategies for DJK Following Cervical Deformity Correction

Themistocles S. Protopsaltis, MD; Eaman Balouch, MD, PhD; William Schreiber-Stainthorp, BS; Robert K. Eastlack, MD; Justin S. Smith, MD, PhD; D. Kojo Hamilton, MD; Alan H. Daniels, MD; Eric O. Klineberg, MD; Brian J. Neuman, MD; Robert A. Hart, MD; Shay Bess, MD; Christopher I. Shaffrey, MD; Frank J. Schwab, MD; Virginie Lafage, PhD; Christopher P. Ames, MD

Paper #78: Optimizing Cervicothoracic Junction Biomechanics After C7 Pedicle Subtraction Osteotomy: a Cadaveric Study of Stability and Rod Strain

Jakub Godzik, MD; Jennifer N. Lehrman, MS; Bernardo de Andrada, MD; Christopher P. Ames, MD; Heiko Koller, MD; Anna S. Newcomb, MS; Jay D. Turner, MD; Brian P. Kelly, PhD

Session 7: Early Onset Scoliosis/Syndromic

Moderators: Colin Nnadi, FRCS

Paper #79: Urgent Field Safety Notice Concerning Locking Pin Fracture from Manufacturer of Magnetically Controlled Growing Rods: How Does Data from an Independent Explant Centre Compare?

Thomas J. Joyce, PhD; Simon L. Smith, PhD; Göksu Kandemir, MSc; Paul R. Rushton, FRCS; David Fender, FRCS; Andrew J. Bowey, FRCS; Michael J. Gibson, FRCS

Paper #80: Spinal Lengthening with Magnetically Controlled Growing Rods: Data from the Largest Series of Explanted Devices

Paul R. Rushton, FRCS; Simon L. Smith, PhD; Göksu Kandemir, MSc; Liam Forbes ; David Fender, FRCS; Andrew J. Bowey, FRCS; Michael J. Gibson, FRCS; Thomas J. Joyce, PhD

Paper #81: Exo Corporal Evaluation of Magnetic Spinal Growth Rods (MSGR) in Patients Treated by the Protocol of Frequent Small Increments Lengthenings

Joseph Ivan Krajbich, MD; Michelle C. Welborn, MD; Daniel Bouton, MD

Paper #82: How to Select the Lower Instrumented Vertebra (LIV) in Traditional Growing Rods (TGR) Index Surgery

Federico Fusini, MD; Javier Pizones, MD, PhD; Lucía Moreno-Manzanaro, BS; Jose Miguel Sánchez-Márquez, MD, PhD; Gloria Talavera, MD; Nicomedes Fernández-Baillo, MD; Francisco Javier S. Perez-Grueso, MD

Paper #83: The Effect of Magnetically Controlled Growing Rod Lengthening on Kyphosis

Michelle C. Welborn, MD; Nikolas Baksh, MD; Joseph Ivan Krajbich, MD; Daniel Bouton, MD

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Paper #84: Does the Law of Diminishing Returns Exist in Early Onset Scoliosis with Connective Tissue Disorders?

Majd Marrache, MD; Klane K. White, MD; A. Noelle Larson, MD; Tricia St. Hilaire, ; Majella Vaughan, ; Regina Woon, MPH; Paul D. Sponseller, MD, MBA

Paper #85: Comparison of Results and Complications: Hybrid Technique of Posterior Osteotomy with Short Segmental Fusion and Dual Growing Rod Technique VS Traditional Dual Growing Rod (TGR) Technique

Jianqiao Zhang, MD; Shengru Wang, MD

Paper #86: Surgical Treatment for Congenital Scoliosis Patients Aged from 9 to 11 years Old: Is Growth-friendly Treatment Superior to One-Stage Fusion?

Liang Xu, MD; Xu Sun, MD; Zhen Liu, MD; Zezhang Zhu, MD; Bangping Qian, MD; Yong Qiu, MD

Paper #87: Revision Rates of 5-Year Minimum Graduates of Growth Friendly Surgery for Early Onset Scoliosis

Robert F. Murphy, MD; John B. Emans, MD; Paul D. Sponseller, MD, MBA; David S. Marks, FRCSOrth; David L. Skaggs, MD; George H. Thompson, MD; John (Jack) M. Flynn, MD; Behrooz A. Akbarnia, MD; John T. Smith, MD; Jeffrey R. Sawyer, MD

Paper #88: Spinal Mobility and Muscle Function in Middle-Aged Patients Treated for Early Onset Idiopathic Scoliosis Compared with Untreated and Treated Adolescent Onset Patients

Karin Romberg, PhD; Aina J. Danielsson, MD, PhD; Monika Fagevik Olsen, PhD; Gunilla Kjellby-Wendt, PhD

Paper #89: Mental Health Consequences of Serial Mehta Casting: Negative Correlation with Behavioral Development

Nishank Mehta, BA; Lacey Magee, BA; Heidi R. Nocka, BA; Peter F. Sturm, MD; Joshua M. Pahys, MD; Sumeet Garg, MD; Robert F. Murphy, MD; Pediatric Spine Study Group; Patrick J. Cahill, MD

Paper #90: Pulmonary Hypertension (PH) and Thoracic Cage Function in Patients with Early Onset Scoliosis: Assessment with Quantitative Dynamic Magnetic Resonance Imaging (QdMRI)

Yubing Tong, PhD; Jayaram K. Udupa, PhD; Joseph M. McDonough, MS; Caiyun Wu, MS; Catherine Qiu, MS; Carina Lott, MS; Nirupa Galagedera, BA; Catherine M. Avitabile, MD; Jason B. Anari, MD; Drew A. Torigian, MA; Patrick J. Cahill, MD

Paper #91: Nusinersin does not Mitigate Spine Pathoanatomy in Spinal Muscular Atrophy Patients

Michael J. Troy, BS; Patricia E. Miller, MS; Carina Lott, MS; Catherine Qiu, MS; Jason B. Anari, MD; Brian D. Snyder, MD, PhD

Paper #92: Is the Sagittal Profile of the Spine Modified in Patients with Achondroplasia after the Lower Limb Lengthening Surgery?

Rosa M. Egea-Gómez, MD, PhD; María Galán-Olleros, MD; Cristina Madrid de la Serna, MD; Javier Alonso Hernández, MD; Carlos Miranda-Gorozarri, MD; Carmen Martínez-González, MD; Rafael González-Díaz, MD, PhD

Paper #93: Prospective Spine at Risk Program for Prevalence of Intracanal Spine Lesions in Pediatric Hereditary Multiple Osteochondromas

Catphuong L. Vu, MD; Antoinette W. Lindberg, MD; Viviana Bompadre, PhD; Klane K. White, MD; Jennifer M. Bauer, MD

Session 8: Sagittal/PJK

Moderators: Khaled Kebaish, MD & Eric O. Klineberg, MD

Paper #94: Age- and Gender-Based Normative Values of Whole-body Sagittal Alignment: A Large Cohort Study of 584 Chinese Adults Aged from 20 to 89

Zongshan Hu, PhD; Zhen Liu, MD; Tsz Ping Lam, PhD; Zezhang Zhu, MD; Yong Qiu, MD; Jack Chun Yiu Cheng, MD, PhD

Paper #95: Increase in Thoracic Kyphosis with Aging is the Main Factor that Leads to Positive Sagittal Balance: Results of the Multi-ethnic Alignment Normative Study (MEANS) of Asymptomatic Adults

Zeeshan M. Sardar, MD; Meghan Cerpa, MPH; Jean-Charles Le Huec, MD; Stephane Bourret, PhD; Kazuhiro Hasegawa, MD, PhD; Hee-Kit Wong, FRCS; Gabriel KP Liu, MD; Hwee Weng Dennis Hey, MD; Hend Riahi, MD; Michael P. Kelly, MD; Lawrence G. Lenke, MD

Paper #96: Correlation Between Degenerative Diseases of the Lumbar Spine and Types of Lumbar Lordosis

Nelson Astur, MD; Bruno B. Roberto, MD; Delio E. Martins, MD, PhD; Michel Kanas, MD; Marcelo Wajchenberg, MD, PhD

Paper #97: A Patient-specific Approach to Alignment Goals and Assessing Proximal Junctional Kyphosis Risk after Adult Spinal Deformity Surgery

Jeffrey M. Hills, MD; Benjamin M. Weisenthal, MD; Jacquelyn S. Pennings, PhD; John Wanner, MD; Byron F. Stephens, MD

Paper #98: Is Chin-Brow Vertical Angle Always the Reliable Parameter for Correction Planning in Ankylosing Spondylitis Patients with Thoracolumbar Kyphosis?

Bangping Qian, MD; Wen-bin Xuan, MD; Yong Qiu, MD; Jichen Huang, MD

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Paper #99: C2 SVA: When Angles are Too Complicated and the X-Ray is Too Small

Simon Morr, MD; Meghan Cerpa, MPH; Joseph A. Osorio, MD, PhD; James D. Lin, MD; Zeeshan M. Sardar, MD; Richard P. Menger, MD; Eric Leung, BS; Ronald A. Lehman, MD; Lawrence G. Lenke, MD

Paper #100: The Posterior Cranial Vertical Line (PCVL): A Novel Predictor for Proximal Junctional Kyphosis in Spinal Deformity Surgery

Griffin R. Baum, MD; Meghan Cerpa, MPH; Paul J. Park, MD; Joseph A. Osorio, MD, PhD; Nathan J. Lee, MD; Eric Leung, BS; Meghana Vulapalli; Ronald A. Lehman, MD; K. Daniel Riew, MD; Lawrence G. Lenke, MD

Paper #101: Is the Distance from the Upper Instrumented Vertebrae (UIV) to the Gravity Line Associated with Proximal Junctional Kyphosis (PJK) after Adult Spinal Deformity (ASD) Correction?

Pingguo Duan, MD; Praveen V. Mummaneni, MD; Jeremy Guinn, BS; Minghao Wang, MD, PhD; Zhuo Xi, MD; Bo Li, MD; Hao-Hua Wu, MD; Rory R. Mayer, MD; Joshua Rivera; Shane Burch, MD; Sigurd H. Berven, MD; Dean Chou, MD

Paper #102: has been withdrawn

Paper #103: Low Pelvic Incidence (PI) Patients are at High Risk of Over Correction Following ASD Surgery

Alex Soroceanu, MPH; Themistocles S. Protosaltis, MD; Gregory M. Mundis, MD; Justin S. Smith, MD, PhD; Michael P. Kelly, MD; Alan H. Daniels, MD; Eric O. Klineberg, MD; Christopher P. Ames, MD; Robert A. Hart, MD; Shay Bess, MD; Christopher I. Shaffrey, MD; Frank J. Schwab, MD; Virginie Lafage, PhD; Munish C. Gupta, MD

Paper #104: Understanding Sagittal Compensation in Adult Spinal Deformity Patients: Relationship Between Pelvic Tilt and Lower Extremity Position

Takayoshi Shimizu, MD, PhD; Meghan Cerpa, MPH; Eric Leung, BS; Ronald A. Lehman, MD; Lawrence G. Lenke, MD

Paper #105: What is Actually Happening Inside the “Cone of Economy”: Compensatory Mechanisms During a Dynamic Balance Test

Ram Haddas, PhD; Alexander M. Satin, MD; Isador H. Lieberman, MD

Paper #106: has been withdrawn

Paper #107: Achieving Harmonious Sagittal Profile Prevents from PJK in Adolescents with Idiopathic Scoliosis

Sebastien Pesenti, MD, PhD; Federico Solla, MD; Brice Ilharrebordé, MD, PhD; Christian Morin, MD; Yann Philippe Charles, MD, PhD; Jean-Luc Clement, MD

Paper #108: Upper Instrumented Vertebral Pelvic Angle and Risk of Proximal Junctional Kyphosis at Two-year Follow-Up

Hao-Hua Wu, MD; Dean Chou, MD; Jeremy Guinn, BS; Joshua Rivera; Pingguo Duan, MD; Minghao Wang, MD, PhD; Zhuo Xi, MD; Bo Li, MD; Shane Burch, MD; Praveen V. Mummaneni, MD; Sigurd H. Berven, MD

Session 10A: Spondylolisthesis/Congenital/Miscellaneous

Moderators: Samuel K. Cho, MD & Michael Vitale, MD

Paper #123: Can Surgery Restore Normal Quality of Life After Failed Conservative Treatment of Pediatric Low-Grade Spondylolisthesis?

Jean-Marc Mac-Thiong, MD, PhD; Julie Joncas, RN; James Choueiry, MD; Stefan Parent, MD, PhD; Soraya Barchi, BSc; Hubert Labelle, MD

Paper #124: Does Meyerding Slippage Reduction in Spondylolisthesis Correlate with Patient Outcomes?

Rory R. Mayer, MD; Dean Chou, MD; Brenton Pennicooke, MD; Praveen V. Mummaneni, MD

Paper #125: Health-Related Quality of Life (HRQL) of Instrumented Reduction with Circumferential Arthrodesis for Pediatric Spondylolisthesis. A Comparison with Age and Gender Matched Healthy Controls

Ella Virkki, MD; Hanna Oksanen, RN; Linda Helenius, MD; Olli T. Pajulo, MD; Elias Diarbakerli, PhD; Paul Gerdhem, MD; Bernd Pape, PhD; Ilkka J. Helenius, MD

Paper #126: Complications of the Surgical Treatment of Pediatric High-grade Spondylolisthesis: A Prospective Multicenter Study

Jean-Marc Mac-Thiong, MD, PhD; Michael T. Hresko, MD; Abdulmajeed Alzakri, MD; Stefan Parent, MD, PhD; Daniel J. Sucato, MD, MS; Lawrence G. Lenke, MD; Michelle Claire Marks, PT; Hubert Labelle, MD

Paper #127: What is the Optimal Surgical Method for Achieving Successful Symptom Relief in Paediatric High Grade Spondylolisthesis?

Brett Rocos, MD; Reinhard D. Zeller, MD, FRCS(C); Stephen J. Lewis, MD, FRCS(C); Yongyao Tan, MS; David E. Lebel, MD, PhD

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Paper #128: Types, Timing, Impact, and Predictors of Reoperations Following Surgery for Lumbar Spondylolisthesis

Andrew K. Chan, MD; Erica F. Bisson, MD; Mohamad Bydon, MD; Kevin T. Foley, MD; Steven D. Glassman, MD; Christopher I. Shaffrey, MD; Michael Y. Wang, MD; Paul Park, MD; Eric Potts, MD; Mark E. Shaffrey, MD; Domagoj Coric, MD; John J. Knightly, MD; Kai-Ming Gregory Fu, MD; Jonathan R. Slotkin, MD; Anthony L. Asher, MD; Michael S. Virk, MD, PhD; Panagiotis Kerezoudis, MD, MS; Mohammed A. Alvi, MBBS; Jian Guan, MD; Regis W. Haid Jr., MD; Praveen V. Mummaneni, MD

Paper #129: Congenital Scoliosis Patients Can Attain Similar Curve Correction and Perioperative Outcomes to AIS Patients without the Need for Hemivertebra Excision

Vishal Sarwahi, MD, MBBS; Jesse Galina, BS; Jordan Fakhoury, DO; Thomas J. Dowling III, MD; Sayyida Hasan, BS; Yungtai Lo, PhD; Terry D. Amaral, MD

Paper #130: Failure of Initial Curve Correction Increases the Risk of Postoperative Curve Progression in Patients with Congenital Scoliosis: Mean 16-year Follow-Up

Noriaki Kawakami, MD, PhD; Hiroko Matsumoto, PhD; Toshiki Saito, MD, PhD; Ryoji Tauchi, MD, PhD; Tetsuya Ohara, MD

Paper #131: Reconstruction After Total En Bloc Spondylectomy: Does Bony Fusion Mean Long-term Stability?

Yat Wa Wong, Dr; Kenny Kwan, MD

Paper #132: Does Thoracic Paravertebral Block Improve Postoperative Pain Scores in Scoliosis Patients Undergoing Anterior Vertebral Body Tethering?

Smitha Mathew, MBBS, MS; Todd A. Milbrandt, MD, MS; D. Dean Potter, MD; Dawit T Haile, MD; A. Noelle Larson, MD

Paper #133: Radiation Exposure with Use of Intraoperative CT Guidance in Spinal Deformity Surgery

Bhumit R. Desai, MD; Gonzalo Sumarriva, MD; Alaa Mohammed; Paul C. Celestre, MD

Paper #134: An Audit of the Radiation Exposures in Children and Adults During the Treatment of Spinal Deformities.

Jwalant S. Mehta, FRCS (Orth), MCh (Orth), MS (Orth), D Orth; Ravindra Thimmaiah, FRCS Tr & Orth; James Kho, MD; Upasana Topiwala; Vijay Sawlani, MD; Rajesh Botchu, MD

Session 10B: Adult Spinal Deformity II

Moderators: Marinus de Kleuver, MD, PhD & Han Jo Kim, MD

Paper #135: A Propensity-score Matched Comparison of National vs. Single-institution Databases: Analysis of Unplanned Readmissions in Patients Undergoing Posterior Lumbar Fusion

Amir Taree, BS; Varun Arvind, BS; Eric Geng, BS; Kush Mody, BS; Christopher Mikhail, MD; Samuel K. Cho, MD

Paper #136: Patient-reported Outcomes after Complex Adult Spinal Deformity Surgery: 5-year Follow-Up Results of the Scoli-RISK-1 Study

Scott Zuckerman, MD; Meghan Cerpa, MPH; Lawrence G. Lenke, MD; Zeeshan M. Sardar, MD; Meghana Vulapalli; Eric Leung, BS; Michael P. Kelly, MD; Christopher I. Shaffrey, MD; Yong Qiu, MD; Frank J. Schwab, MD; Leah Y. Carreon, MD; Kenneth Cheung, MD, MBBS, FRCS; Oheneba Boachie-Adjei, MD; Ames P. Christopher, MD; Ferran Pellisé, MD, PhD; Justin S. Smith, MD, PhD; Yukihiro Matsuyama, MD, PhD; Khaled M. Kebaish, MD

Paper #137: Do Readmissions and Reoperations Adversely Affect Patient-reported Outcomes Associated with Complex Adult Spinal Deformity Surgery at a Minimum 2 Year Postoperative?

Nathan J. Lee, MD; Jun Kim, MD; Andrew C. Vivas, MD; Joseph M. Lombardi, MD; Jay S. Reidler, MD; Scott Zuckerman, MD; Daniel Hong, MD; Paul J. Park, MD; Meghan Cerpa, MPH; Eric Leung, BS; Zeeshan M. Sardar, MD; Ronald A. Lehman, MD; Lawrence G. Lenke, MD

Paper #138: Complication Profile Associated with S1 Pedicle Subtraction Osteotomy Compared to Three Column Osteotomies at Other Thoracolumbar Spinal Levels: Series of 405 Patients with 9 Sacral Osteotomies

Darryl Lau, MD; Alexander Haddad, BS; Rushikesh S. Joshi, BS; Vedat Deviren, MD; Christopher P. Ames, MD

Paper #139: Management of Severe Adult Spinal Deformity (ASD) with Circumferential Minimally Invasive Surgical (CMIS) Strategies: A 13-Year Study

Neel Anand, MD; Edward K. Nomoto, MD; Christopher Kong, MD; Alisa Alayan, MD; Babak Khandehroo, MD; Sheila Kahwaty, PA-C

Paper #140: Residual Coronal Malalignment Results in Less Improvement in Pain and Disability after ASD Surgery

Amit Jain, MD; Emmanuel McNeely, MS; Brian J. Neuman, MD; Jeffrey L. Gum, MD; Shay Bess, MD; Richard Hostin, MD; Virginie Lafage, PhD; Samrat Yeramani, PhD; Eric O. Klineberg, MD; Renaud Lafage, MS; Munish C. Gupta, MD; Justin S. Smith, MD, PhD; Douglas C. Burton, MD; Peter G. Passias, MD; Themistocles S. Protopsaltis, MD; Khaled M. Kebaish, MD

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Paper #141: Examination of Adult Spinal Deformity Patients Undergoing Surgery with and without Implanted Spinal Cord Stimulators and Intrathecal Pumps

Alan H. Daniels, MD; Wesley M. Durand, BS; Alyssa Steinbaum, BS; Renaud Lafage, MS; D. Kojo Hamilton, MD; Peter G. Passias, MD; Han Jo Kim, MD; Themistocles S. Protopsaltis, MD; Virginie Lafage, PhD; Justin S. Smith, MD, PhD; Christopher I. Shaffrey, MD; Munish C. Gupta, MD; Eric O. Klineberg, MD; Frank J. Schwab, MD; Jeffrey L. Gum, MD; Gregory M. Mundis, MD; Robert K. Eastlack, MD; Khaled M. Kebaish, MD; Alex Soroceanu, MPH; Richard Hostin, MD; Douglas C. Burton, MD; Shay Bess, MD; Christopher P. Ames, MD; Robert A. Hart, MD

Paper #142: Correlation of Desoxypyridinoline Levels and Frequency of Pseudarthrosis Formation in Patients with Degenerative Spine Deformity

Sergey Kolesov, MD, PhD; Natalia Morozova, MD, PhD

Paper #143: The Rate of Perioperative Neurologic Complications Associated with Transforaminal Lumbar Interbody Fusion in Patients Undergoing Adult Spinal Deformity Surgery

Thomas J. Errico, MD; Tina Raman, MD

Session 11: Basic Science

Moderators: Hamid Hassanzadeh, MD & Ying Li, MD

Paper #144: LncAIS: A Novel and Significant Long Non-coding RNA Identified by Microarray Analysis which is Implicated in the Pathogenesis of AIS and Associated Osteopenia

Qianyu Zhuang, MD; Jianguo Zhang, MD

Paper #145: Collagen X Biomarker (CXM) is Predictive of Growth Cessation in Idiopathic Scoliosis

Michelle C. Welborn, MD; Ryan Coghlan, MS; James O. Sanders, MD; Joseph Stone, MD; Amer F. Samdani, MD; Vishwas R. Talwalkar, MD; Daniel Bouton, MD; William Horton, MD; Susan Sienko, PhD

Paper #146: Fourteen Novel Susceptibility Loci and Genetic Architecture in Adolescent Idiopathic Scoliosis

Nao Otomo, MD; Kazuki Takeda, MD, PhD; Yoji Ogura, MD, PhD; Yohei Takahashi, MD, PhD; Noriaki Kawakami, MD, PhD; Koki Uno, MD, PhD; Manabu Ito, MD, PhD; Shohei Minami, MD, PhD; Hiroshi Taneichi, MD, PhD; Satoshi Inami, MD, PhD; Teppei Suzuki, MD, PhD; Hideki Sudo, MD, PhD; Ikuho Yonezawa, MD, PhD; Takashi Kaito, MD, PhD; Kei Watanabe, MD, PhD; Yuki Taniguchi, MD, PhD; Katsumi Harimaya, MD, PhD; Toshiaki Kotani, MD, PhD; Nobuyuki Fujita, MD, PhD; Mitsuru Yagi, MD, PhD; Kazuhiro Chiba, MD, PhD; Naobumi Hosogane, MD, PhD; Tsuyoshi Sakuma, MD, PhD; Eijiro Okada, MD, PhD; Tatsuya Sato, MD, PhD; Tsutomu Akazawa, MD, PhD; Kotaro Nishida, MD, PhD; Hideki Shigematsu, MD, PhD; Takahiro Iida, MD, PhD; Satoru Demura, MD, PhD; Kenichiro Kakutani, MD, PhD; Ryo Sugawara, MD, PhD; Taichi Tsuji, MD, PhD; Masaya Nakamura, MD, PhD; Morio Matsumoto, MD, PhD; Chikashi Terao, MD, PhD; Shiro Ikegawa, MD, PhD; Kota Watanabe, MD, PhD

Paper #147: Investigation of In-vivo Three-dimensional Changes of the Spinal Canal After Corrective Surgeries of the Adolescent Idiopathic Scoliosis

Yong Hai, MD, PhD; Chaofan Han, MD, PhD; Guoan Li, PhD

Paper #148: Tether Tension Declines Over Time: A Biomechanical Study

Vincent Ruggieri, BS; Benjamin Sinder, PhD; Jason B. Anari, MD; Patrick J. Cahill, MD

Paper #149: Are Pre-contoured Spinal Rods Mechanically Superior to Manually Contoured Rods?

Kenneth A. Shaw, DO; Dennis P. Devito, MD; Michael L. Schmitz, MD; Joshua S. Murphy, MD

Paper #150: 3D Cone-beam Tomosynthesis (CBT) Offered Accurate Magnitude of Pedicle Width Measurement and Pedicle Breach Assessment at Lower Radiation Dose than Computed Tomography (CT)

Vidyadhar V. Upasani, MD; Harsha Bandaralage, MS; Christine L. Farnsworth, MS

Paper #151: Does the Bone Mineral Density of the Pedicles Correlate with DEXA T-score? A Cadaver-based Analysis of CT Densitometry

Khalid Odeh, MD; Ashish Mittal, MD; Alexander Rosinski, MS; Joseph Pourtabib, BS; Jeremi Leasure, MS; Dimitriy Kondrashov, MD

Paper #152: Allograft Reconstructed Iliac Bone-graft Donor Site Remodels to Viable Bone and Its Preliminary Clinical Effectiveness in Revision Fusion

Glenn Robin Buttermann, MD; Andrew Freeman, MS; Byron H. Simmons, MD

Self-Paced Program

September 3-December 31, 2020

Self-paced content will be available to all registered attendees through December 31, 2020. Once all content in the self-paced program is completed, additional CME can be claimed.

Paper #153: Effectiveness of Partial Polyacrylic Acid Silver Salt as a Local Hemostatic Agent in Surgical Treatment of Degenerative Spine Disease

Sergey Kolesov, MD, PhD; Natalia Morozova, MD, PhD

Paper #154: Standing Balance and Postural Compensation Among Common Degenerative Spinal Pathologies

Ram Haddas, PhD; Thomas Kosztowski, MD; Damon Mar, PhD; Isador H. Lieberman, MD

Paper #155: Comparison of the Load Delivered to Scoliosis Patients Using Different Halo Gravity Traction Systems: A Bench Study

Jonathan Poli, MS; Robert Aylor, BS; Christopher Howard, MBA; Walter F. Kregel, III, MD; Klane K. White, MD; Gregory J. Redding, MD; Jennifer M. Bauer, MD

Membership Information Session

Prospective members and new candidate members are invited to visit the SRS membership module to learn more about membership with SRS.

Industry Workshops

September 3-December 31, 2020

Delegates are encouraged to view the industry workshops and take part in the live workshop discussions. Each workshop is programmed by a single-supporting company and will feature presentations on topics and technologies selected by the company.

DEPUY SYNTHES

Perioperative Neurologic Complications in Adult and Pediatric Deformity

Faculty: Randal Betz, MD; Puya Alikhani, MD; Baron Lonner, MD; Amer Samdani, MD

Please join this webinar to hear from our distinguished faculty panel in a case based discussion focusing on perioperative neurologic complications in adult and pediatric deformity.

Faculty cases will cover the following:

- Management of IONM Alerts in the OR
- Prevention of Nerve Root Injury
- Delayed Neurologic Events
- Sub-acute Management of the Patient After Paralysis in the OR

GLOBUS MEDICAL, INC.

Adult and Adolescent Spinal Deformity: Complex Surgical Techniques with ExcelsiusGPS®

Faculty: Hoon Choi, MD, MS, PhD; Sajan Hegde, MBBS, MS

This webinar is an overview of complex surgical techniques using the revolutionary robotic navigation system, ExcelsiusGPS®. The session will feature real life experiences and in depth case discussions with surgeon experts.

The following will be addressed:

- Initial ExcelsiusGPS® Experience and Learning Curve
- Technology Evaluation: Robotics versus Navigation
- Case Review Session: Complex Surgical Techniques with Robotic Navigation
- Cases Featuring: Pediatric and Adult Deformity, Trauma, Posterior Cervical, SI Fusion, Single Position Lateral Screw Placement
- Case Review Discussion and Q&A with Audience **pre-recorded*

MEDICREA

The Importance of Artificial Intelligence to Improve Outcomes and Efficiencies through Standardization

Moderator: Rajiv Sethi, MD

Faculty: Christopher Ames, MD; Evalina Burger, MD; Christopher Kleck, MD; Rajiv Sethi, MD

Spinal deformities are complex conditions leading to variability in care outcome and cost. Maximizing the care value equation, i.e. improving the health outcomes while reducing the cost of care delivery, has become the most important challenge for the industry.

Using artificial intelligence, predictive modeling, and patient specific implants, MEDICREA®'s UNiD® ASI platform is driving the change toward standardization by improving outcomes predictability and reproducibility.

Please join us for this industry workshop that will go over:

1. The importance of standardization for spinal surgery.
2. The current challenges in adult spinal deformity and the opportunity offered by A.I.
3. The presentation of MEDICREA® UNiD® ASI platform through case examples.*Faculty:*

MEDTRONIC

Evolutions in Spine Care: Innovative Solutions for Complex Cases

Moderator: Lawrence Lenke, MD

Faculty: Jeremy Fogelson, MD; Ron Lehman, MD; Andrew Bowey, MD

Dr. Larry Lenke will moderate this informative workshop reviewing complex deformity cases and the use of novel surgical techniques, enabling technologies, and construct designs to address challenging spinal malalignments. Through a series of case reviews, faculty members will discuss patient selection, pre-operative planning, navigated robotic guidance, building sustaining constructs, and innovative ways surgeons are learning new skills.

- Challenging Constructs; When Two Rods are Just Not Enough - Jeremy Fogelson, MD
- Spinal Robotics; Holistic Construct Design with Robotic-guided Execution - Ron Lehman, MD
- A New Era in Pediatric Deformity: From Virtual Reality to Anterior Vertebral Body Tethering - Andrew Bowey, MD

Industry Workshops

September 3-December 31, 2020

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NUVASIVE

Powerful and Efficient Deformity Correction

Moderator: Amer Samdani, MD

Speakers: Jahangir "John" Asghar, MD; Robert H. Cho, MD; Stewart Tucker, MD

In this virtual workshop you will hear Dr. John Asghar, Dr. Bob Cho, and Mr. Stewart Tucker discuss their personal experiences applying the broad applications of Reline 3D across both adult and pediatric deformity cases. The session will be moderated by renowned spinal deformity expert, Dr. Amer Samdani.

STRYKER

Complex Pediatric Deformities: How Have We Evolved in the Past Decade?

Faculty: Benny Dahl, MD; Martin Gehrchen, MD, PhD; Firoz Miyanji, MD, FRCSC; Burt Yaszay, MD

Techniques have evolved, spinal implant technologies have advanced, and lessons have been learned! This interactive workshop will feature discussions around the toughest challenges and greatest lessons of the past decade in the world of pediatric deformity.

About SRS

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

MISSION STATEMENT

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

MEMBERSHIP

SRS is open to orthopaedic surgeons, neurosurgeons, researchers, and allied health professionals who have a practice that focuses on spinal deformity. Visit www.srs.org/professionals/membership for more information 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, a Global Outreach Program, the Research Education Outreach (REO) Fund which provides grants for spine deformity research, and development of patient education materials.

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