



52ND
ANNUAL MEETING &
COURSE 2017
SEPTEMBER 6-9
PHILADELPHIA PA USA

PRELIMINARY PROGRAM



SPONSORED BY THE SCOLIOSIS RESEARCH SOCIETY



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TABLE OF CONTENTS

Welcome Letter	3
Annual Meeting Invited Lecturers & Award Recipients	4
General Meeting Information	5
Location Information	7
Registration Information	8
Social Events	9
Guest Hospitality Program & Optional Tours	10
Housing Information	11
Meeting Outline	12
Pre-Meeting Course	13
Case Discussion Program	16
Educational Program – Hibbs Society Meeting	17
Educational Program – Lunchtime Symposia	18
Educational Program – Half-Day Courses	21
Scientific Program	29
About SRS	37
SRS Board of Directors, Councils and Committees	38
2016 Award Recipients	39
2016 Research Grant Recipients	40
Registration Forms	
Delegate Registration Form	41
Guest Registration Form	43
Group Registration Form	45

DATES TO REMEMBER

Registration & Housing Open	April 15, 2017
Housing Reservation Deadline:	August 13, 2017
Advance Registration Deadline:	August 15, 2017
Registration Cancellation Deadline:	August 15, 2017

52nd Annual Meeting & Course Venue

Philadelphia Marriott Downtown
1201 Market Street
Philadelphia, PA 19107

FUTURE EDUCATIONAL EVENTS

8th Spine Deformity Solutions: A Hands-On Course

June 28-30, 2017
Nijmegen, Netherlands

Current Concepts in Spine Deformity

October 13-15, 2017
Shenzhen, China

9th Spine Deformity Solutions: A Hands-On Course

October 22-24, 2017
Bangkok, Thailand

25th IMAST

July 11-14, 2018
Los Angeles, CA, USA

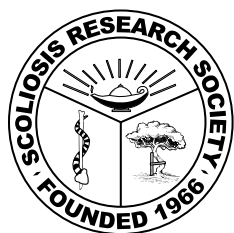
53rd Annual Meeting & Course

October 10-13, 2018
Seoul, Korea

WORLDWIDE CONFERENCES

Milan, Italy

SRS precourse Complications in Surgery for Spinal Deformity in the Child and the Adult in conjunction with the Global Spine Congress
May 3, 2017



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Patrick J. Cahill, MD

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WELCOME LETTER

Dear Colleagues,

As the 2017 local organizing host, I invite you to attend the 52nd Annual Meeting & Course in Philadelphia, PA, USA, September 6-9, 2017. Join us in this historic city, home to many of the leading centers of spine deformity surgery and research, for a meeting that promises to continue Philadelphia's legacy as a place where great minds convene.

The meeting will take place at the Philadelphia Marriott Downtown, located near Independence Hall and the Liberty Bell and across the street from the Reading Terminal Market, the nation's oldest farmers' market full of vendors serving a variety of international cuisines as well as authentic Philly cheesesteaks and Pennsylvania Dutch fare. The Marriott Downtown is also near treasured landmarks, premier museums, acclaimed restaurants, and historic neighborhoods displaying the city's trademark federalist-style architecture.

The Program and Education Committees have worked hard to present another exceptional program. The opening ceremonies on Wednesday, September 6, will feature a Howard Steel Lecture presented by CNN/SiriusXM/Sunday Philadelphia Inquirer's Michael Smerconish. Delegates should also plan to attend the pre-meeting course on Wednesday morning, which will feature a diverse selection of SRS members speaking on "A Multidisciplinary Approach to Global Spine Care." The farewell banquet on Friday, September 8, will be held at the National Constitution Center, which boasts an impressive and interactive museum chronicling the United States Constitution, accessible for SRS attendees to explore.

I welcome you all to the 52nd Annual Meeting & Course, and I look forward to sharing Philadelphia's rich history, liberty, and love.

Warm Regards,

A handwritten signature in black ink, appearing to read "Patrick Cahill", written in a cursive style.

Patrick J. Cahill, MD

ANNUAL MEETING INVITED LECTURES & AWARD RECIPIENTS

WEDNESDAY, SEPTEMBER 6, 2017

Howard Steel Lecture

2016: What Happened and Why?

Michael Smerconish



Michael Smerconish is the host of a daily radio program heard on SiriusXM's POTUS channel. He is also the host of CNN's Smerconish, which airs Saturdays at 9 a.m. and 6 p.m. He is a newspaper columnist for the Sunday Philadelphia Inquirer and his columns are routinely reprinted in newspapers all across the country. He has authored six books, the most recent of which, TALK, is a novel for which the television rights were optioned by Warner Brothers. He is a 1984 Phi Beta Kappa graduate of Lehigh University and a 1987 graduate of the University of Pennsylvania Law School. Smerconish is of counsel to the Philadelphia law firm of Kline & Specter, and resides in the Philadelphia suburbs where he and his wife have raised four children.

Walter P. Blount Award Recipient

Presented for outstanding service to those with spinal deformity, and for generosity to the profession and Society.

TO BE ANNOUNCED

FRIDAY, SEPTEMBER 8, 2017

Harrington Lecture

Global Burden of Disease Study 2016: Key Findings and Implications for Musculoskeletal Research

Christopher J. L. Murray, MD, DPhil

Director, Institute for Health Metrics and Evaluation



Christopher J.L. Murray, MD, DPhil, is a Professor of Global Health at the University of Washington and Institute Director of the Institute for Health Metrics and Evaluation (IHME) whose career has focused on improving health for everyone worldwide by improving health evidence. A physician and health economist, his work has led to the development of a range of new methods and empirical studies to strengthen health measurement, analyze the performance of public health and medical care systems, and assess the cost effectiveness of health technologies. Dr. Murray is a founder of the Global Burden of Disease (GBD) approach, a systematic effort to quantify the comparative magnitude of health loss due to diseases, injuries, and risk factors by age, sex, and geography over time. He led the collaborative of almost 500 researchers from 50 countries that produced the Global Burden of Diseases, Injuries, and Risk Factors Study 2010 (GBD 2010).

In his earlier work, Dr. Murray focused on tuberculosis control and the development with Dr. Alan Lopez of the GBD methods and applications. From 1998 to 2003, Dr. Murray worked at the World Health Organization (WHO), where he served as the Executive Director of the Evidence and Information for Policy Cluster while Dr. Gro Harlem Brundtland was Director-General. He went on to become Director of the Harvard Initiative for Global Health and the Harvard Center for Population and Development Studies, as well as the Richard Saltonstall Professor of Public Policy at the Harvard School of Public Health, from 2003 until 2007. Dr. Murray has authored or edited 15 books, many book chapters, and more than 300 journal articles in internationally peer-reviewed publications. He holds Bachelor of Arts and Science degrees from Harvard University, a DPhil in International Health Economics from Oxford University, and a medical degree from Harvard Medical School.

Lifetime Achievement Award Recipients

Presented to a member who has exhibited long and distinguished service to SRS and to spinal deformity research and care.

TO BE ANNOUNCED

GENERAL MEETING INFORMATION

MEETING DESCRIPTION

The Scoliosis Research Society (SRS) Annual Meeting & Course is a forum for the realization of the Society's mission and goals, the improvement of patient care for those with spinal deformities. Over 125 papers will be presented on an array of topics, including adolescent idiopathic scoliosis, growing spine, kyphosis, adult deformity, trauma, neuromuscular scoliosis and tumors.

ANNUAL MEETING LEARNING OBJECTIVES

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

- Identify the Pre/Intra/Post Operative factors that can be effectively modified to improve patient outcomes and reduce complications.
- Apply useful strategies to self-evaluate and strengthen private and academic practices.
- Compare risks and benefits of new techniques to optimize treatment success for patients with spinal deformity.
- Describe the informed consent process required to maximize patient understanding of the risks, benefits, & treatment options available for their spine problem.
- Consider developing a multidisciplinary team approach of risk management for the treatment of spine deformities.

PRE-MEETING COURSE LEARNING OBJECTIVES

As a result of participating in this activity, participants should be able to:

- Describe the multidisciplinary preoperative workup for spinal deformity patients with coexisting medical comorbidities
- Describe the current options for neuromonitoring and advantages and disadvantages of each.
- Describe the management strategies for intraoperative acute blood loss anemia in the pediatric patient
- Describe potential postoperative complications of surgical treatment of spinal deformity as well as complication management strategies

TARGET AUDIENCE

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

ACCREDITATION STATEMENT

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

CREDIT DESIGNATION

SRS designates this live activity for a maximum of 28 credits (7.5 for Pre-Meeting Course, 20.5 for Annual Meeting) *AMA PRA Category 1 Credit(s)*[™]. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

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 will be included 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.

VIDEO RECORDING PROHIBITED

SRS does not allow personal video recording of the presentations of any kind. SRS holds the right to confiscate any and all recording taken of any of the presentations. All session rooms will be recorded and will be available to delegates after the meeting on the SRS website.

GENERAL MEETING INFORMATION

INSURANCE/LIABILITIES AND DISCLAIMER

SRS will not be held liable for personal injuries or for loss or damage to property incurred by participants or guests at the Annual Meeting & Course including those participating in tours and social events. Participants and guests are encouraged to take out insurance to cover loss incurred in the event of cancellation, medical expenses or damage to or loss of personal effects when traveling outside of their own countries.

SRS cannot be held liable for any hindrance or disruption of the Annual Meeting & Course proceedings arising from natural, political, social or economic events or other unforeseen incidents beyond its control. Registration of a participant or guest implies acceptance of this condition.

The materials presented at this Continuing Medical Education activity are made available for educational purposes only. The material is not intended to represent the only, nor necessarily best, methods or procedures appropriate for the medical situations discussed, but rather is intended to present an approach, view, statement, or opinion of the faculty that may be helpful to others who face similar situations.

SRS disclaims any and all liability for injury or other damages resulting to any individual attending a scientific meeting and for all claims that may arise out of the use of techniques demonstrated therein by such individuals, whether these claims shall be asserted by a physician or any other person.

LANGUAGE

Presentations and course materials will be provided in English.

NO SMOKING POLICY

Smoking is not permitted during any Annual Meeting activity or event.

ATTIRE

Business (suits) or business casual attire (polo or dress shirt, sport coats) are appropriate for Annual Meeting & Course sessions; ties are not required. Business casual attire is recommended for the Welcome Reception. Cocktail attire is appropriate for the Farewell Banquet.

MEMBERS BUSINESS MEETINGS

All SRS members are invited to the Member's Business Meetings, held Thursday, September 7 through Saturday, September 9 from 6:30 – 7:45am. Agendas will include reports from the various SRS committees, presentations by the 2017 Travelling Fellows and Edgar Dawson Scholarship recipients, and updates on SRS activities and programs. A hot breakfast buffet will be served.

NON-MEMBERS CONTINENTAL BREAKFAST

All non-members are invited to meet with their colleagues, view posters and network over coffee and a continental breakfast served Thursday, September 7 through Saturday, September 9 from 6:30 – 7:45am.

GUEST HOSPITALITY SUITE

Registered guests of Annual Meeting & Course delegates are welcome to meet and plan their days over a continental breakfast, courtesy of SRS. The Guest Hospitality Suite is open September 7 through Saturday, September 9 from 7:30 – 10:00am at the Philadelphia Marriott Downtown. Please refer to page 11 for complete information. Guests must be registered with SRS to access the Hospitality Suite.

LOCATION INFORMATION

ABOUT PHILADELPHIA

Known as the “City of Brotherly Love,” Philadelphia is the second largest east-coast city and fifth largest city overall in the United States. Founded in 1682 by William Penn, Philadelphia is considered the cradle of liberty, a city of medical firsts and the only World Heritage City in the United States.

Philadelphia’s blend of the modern and historical creates a unique destination that offers visitors great shopping, nightlife, culture, and dining. Whether spending time at one of the many world-class museums, such as the Philadelphia Museum of Art; wandering the picturesque streets filled with public art and murals, or learning more about the founding of the United States at Independence Hall, where both the United States Declaration of Independence and Constitution were debated and adopted; Philadelphia offers many cultural and historical attractions for visitors to explore. Although it is famous for its cheesesteaks, Philadelphia’s dining scene continues to gain praise from critics and foodies alike. Visitors will find a wide range of unique restaurants, markets and eateries offering all varieties of food to taste.

Best of all, Philadelphia is consistently ranked as one of the most walkable cities in the U.S., giving visitors the perfect opportunity to explore this exciting city.

ARRIVING IN PHILADELPHIA

By Plane: There are more than 1,200 daily nonstop flights to the Philadelphia International Airport (PHL). The Philadelphia International Airport is located 10 miles from the center of the city; approximately 15 minutes by taxi, with a flat rate of \$28.50 from the airport or a 35-minute ride by SEPTA mass transit. SEPTA’s Airport Line leaves at 30-minute interval from 5:07am to 12:30am, and a one-way fare from the airport to the Jefferson Station (0.2 miles from the headquarters hotel) is \$9. For more information on the Airport Rail Line visit <http://www.septa.org/welcome/airport.html>.

By Train: Amtrak Acela and commuter trains arrive at the historic 30th Street Station throughout the day, placing passengers in the city center and 2 miles from the headquarters hotel, the Philadelphia Marriott Downtown. Philadelphia is only 1 hour and 20 minutes from New York City and 1 hour and 45 minutes from Washington, D.C., via Acela Express.

PASSPORTS AND VISAS

Most international travelers are required to obtain a visa from the U.S. Department of state. For more information, visit <http://travel.state.gov/>.

FALL WEATHER IN PHILADELPHIA

In the first week of September, Philadelphia will be transitioning from late summer to early Fall with warm daytime temperatures leading into cooler evenings.

Average high temperature in September: 78° F

Average low temperature in September: 58° F

ELECTRICITY

The United States operates on 120 volts, compared to the standard 220 volts in Europe.

TIME ZONE

Philadelphia is in US EDT – United States Eastern Daylight Time which is four (4) hours behind Greenwich Mean Time.

REGISTRATION INFORMATION

DATES TO REMEMBER

Registration Open April 15, 2017
Advance Registration Deadline August 15, 2017

SRS encourages online registration for the Annual Meeting & Course at www.srs.org/am17/registration. However, delegates and guests may also register by completing and mailing or faxing the registration form on page ##. All registrations will be confirmed via email. If you do not receive an email confirmation within two weeks of submission, please contact SRS at +1-414-289-9107 or meetings@srs.org.

REGISTRATION PROCEDURES

Registration Class	Annual Meeting* Thurs-Sat, Sept 7-9 (includes Half-Day Course)	CME Add-Ons	Non-CME Add-Ons		TOTAL FEES
		Pre-Meeting Course Wed, Sept 6	Hibbs Society Tues, Sept 5, 1:00-5:00pm	Farewell Banquet Fri, Sept 8, 7:00-10:00pm	
SRS Fellow- Physician	<input type="checkbox"/> \$ 780	<input type="checkbox"/> \$ 250	<input type="checkbox"/> \$ 50	<input type="checkbox"/> \$ 50	
SRS Fellow- Non-Physician	<input type="checkbox"/> \$ 330	<input type="checkbox"/> \$ 250	<input type="checkbox"/> \$ 50	<input type="checkbox"/> \$ 50	
SRS Emeritus Fellow	<input type="checkbox"/> \$ 330	<input type="checkbox"/> \$ 250	<input type="checkbox"/> \$ 50	<input type="checkbox"/> \$ 50	
Non-Member Physician	<input type="checkbox"/> \$ 980	<input type="checkbox"/> \$ 250	<input type="checkbox"/> \$ 50	<input type="checkbox"/> \$ 50	
Non-Member Non-Physician	<input type="checkbox"/> \$ 380	<input type="checkbox"/> \$ 250	<input type="checkbox"/> \$ 50	<input type="checkbox"/> \$ 50	
Resident/ Fellow/ Medical Student	<input type="checkbox"/> \$ 380	<input type="checkbox"/> \$ 150	<input type="checkbox"/> \$ 50	<input type="checkbox"/> \$ 50	
Industry Representative	<input type="checkbox"/> \$ 1030	<input type="checkbox"/> \$ 250	<input type="checkbox"/> \$ 50	<input type="checkbox"/> \$ 50	
Reduced Rate Countries**	<input type="checkbox"/> \$ 380	<input type="checkbox"/> \$ 150	<input type="checkbox"/> \$ 50	<input type="checkbox"/> \$ 50	

WHAT'S INCLUDED?

BASE REGISTRATION FEES – SECTION 1

Annual Meeting

The Annual Meeting runs from Thursday, September 7 to Saturday, September 9 and includes admission to all general and concurrent scientific sessions, lunchtime symposia, breakfast, breaks, lunches, Half-Day courses on Thursday, September 7 (12:00-16:00) and Welcome Reception & Opening Ceremonies on Wednesday, September 6. **This DOES NOT include admission to the Pre-Meeting Course on Wednesday, September 6.**

CME ADD-ONS:

Pre-Meeting Course - \$250

This includes the Pre-Meeting Course, "A Multidisciplinary Approach to Global Spine Care" on Wednesday, September 6 from 8:00-16:30 and breakfast, breaks and lunch during the Pre-Meeting Course.

NON-CME ADD-ONS:

Farewell Banquet - \$50

Open to all registered delegates and registered guests. Tickets are \$50 each and must be purchased in advance. A limited number of tickets may be available onsite, but SRS strongly urges delegates to purchase tickets at the time of registration.

The Farewell Banquet will take place at the National Constitution Center from 19:00-22:00 on Friday, September 8.

Hibbs Society Meeting - \$50

The Hibbs Society Meeting will take place on Tuesday, September 5 from 13:00-17:00.

Please note base registration costs will increase \$100 per registration class on-site!

REGISTRATION INFORMATION

REDUCED RATE COUNTRIES REGISTRATION

Visit www.srs.org/am17/registration for a list of countries that qualify for reduced rate registration. Reduced rate registration is now available online. Delegates may also register using the PDF form, located at the back of the preliminary program.

INVITATION LETTERS

Invitations letters for visa requests are available for registered delegates by contacting meetings@srs.org.

SUBSTITUTIONS

Name substitutions must be made to SRS in writing prior to August 15, 2017. Any name substitutions made onsite will result in a \$100 processing fee. If the original registrant shows up at the meeting, he/she will be responsible for a new onsite registration fee.

CANCELLATIONS & REFUNDS

All cancellations must be received in writing. Delegates may fax their cancellation to (414) 276-3349 or email it to meetings@srs.org. Delegates will receive a confirmation and refund within 14 days of receipt of their cancellation notice. SRS will grant a full refund, less a 10% processing fee, for cancellations received in writing on or before August 15, 2017. No refunds will be granted after August 15, 2017.

GUEST ATTENDANCE

Guest Attendance

(Does not include session admittance.)

Guests must complete and submit a separate registration form. Guest registration fees include access to the Guest Hospitality Program, entrance to the Welcome Reception on Wednesday, September 6 and the ability to register for social events including optional tours and the Farewell Banquet, for additional fees. An additional \$50 charge applies for each ticket to the Farewell Banquet on Friday, September 8. For more information regarding the optional tours and the prices please click on the Tours Tab of the Annual Meeting website at www.srs.org/am17.

A la carte guest tickets for the Welcome Reception & Opening Ceremonies and Farewell Banquet are also available for non-registered guests at an increased rate.

Entrance to the scientific sessions is not included in guest registration fees. Only guests registered as Non-Member Non-Physicians will be allowed to participate in above scientific sessions and breaks. Sorry, no exceptions will be made.

Guest Attendance (Includes session admittance.)

Guests wishing to attend the Scientific Program should register as Non-Member Non-Physicians by filling out a separate Registration Form. Guests that register as a Non-Member Non-Physician will receive entrance to the General and Concurrent Scientific Sessions, Lunchtime Symposia, breakfasts, breaks, lunches, and the Welcome Reception on Wednesday, September 6. An additional \$50 charge applies for each ticket to the Farewell Banquet on Friday, September 8. Optional tours may also be added for additional fees, as indicated.

WIRE TRANSFERS

You may also pay for your Annual Meeting & Course registration through a wire transfer. Please note that some financial institutions charge a processing fee, which is deducted from the amount of the transfer. Partial payment may result in an incomplete registration. If you wish to pay with a wire transfer, please contact the SRS office for more information.

SOCIAL EVENTS

Opening Ceremonies

Wednesday, September 6, 2017
18:00-21:00

Open to all registered delegates and their registered guests at no additional fee. Name badges are required.

The Annual Meeting will officially begin with the Opening Ceremonies and this year's Howard Steel Lecture, presented by Michael Smerconish. The evening will include an introduction of the SRS officers. All delegates and registered guests are invited and encourage to attend the Opening Ceremonies. Following the Opening Ceremonies, we will move to a hosted reception featuring heavy hors d'oeuvres, cocktails, and plenty of lively conversations and reunions with colleagues and friends.

The Welcome Reception is supported, in part, by grants from NuVasive and Zimmer Biomet.

Farewell Banquet

Friday, September 8, 2017
19:00-22:00

Open to all registered delegates and registered guests. Tickets are \$50 each and should be purchased in advance. A limited number of tickets may be available onsite but SRS strongly urges delegates and guests to purchase tickets at the time of registration. Name badges are required. Cocktail dress is appropriate for the Farewell Banquet.

The 52nd Annual Meeting & Course will culminate with a formal plated dinner at the National Constitution Center in historic Philadelphia. The National Constitution Center offers breathtaking birds-eye view of Philadelphia's historic landmarks. Farewell Banquet attendees will also be able to visit the museum's popular attractions including the *Signer's Hall* and *The Story of We The People* which celebrates the United States' Constitution's legacy of freedom with a rotating collection of rare artifacts.

OPTIONAL TOURS & ACTIVITIES

OPTIONAL TOURS

The following tours are available to registered delegates and guests through Stockton & Partners, our partners in Philadelphia. All tour reservations must be made directly on the Stockton & Partners' website, accessible on the Tours tab of the Annual Meeting website (<http://www.srs.org/am17/tours>). Any questions regarding registration or tour details should be directed to Stockton & Partners.

Tours depart and return to the Philadelphia Marriott Downtown

Wednesday, September 6	
Historic Philadelphia	\$50 – Regular / \$45 – Early Bird Savings
Thursday, September 7 – EVENING TOUR	
Philadelphia Lights by Night	\$50 – Regular / \$45 – Early Bird Savings
Friday, September 8	
Philadelphia Old and New	\$65 – Regular / \$59 – Early Bird Savings

TOUR DETAILS

Historic Philadelphia – Wednesday

The birthplace of the nation includes the country's most historic mile. Beginning with our first step out to Philadelphia's modern day Market Street and we will learn how it got its name from the colonial market stalls that bustled with life in the 1700s as explore Independence National Historical Park.

Hear the stories of the people, places and things that made Colonial Philadelphia the seat of government for the young nation. Visit neighborhoods where the Founding Fathers' lived and see how contemporary Philadelphians have made them their own. See the same tiny courtyards and by-ways of colonial Philadelphians – only seen while on foot!

Sites include*: Liberty Bell Center, Independence Hall (ticketed interior tour), Congress Hall, Old City Hall (site of the first Supreme Court), Benjamin Franklin's print shop, Betsy Ross House, Franklin's grave, Elfreth's Alley and Christ Church.

Date: Wednesday, September 6

Tour Length: 3-4 Hours

Type of Tour: Walking Tour

Price per Person: \$50 – Regular / \$45 – Early Bird Savings

Philadelphia Lights by Night – Thursday Evening

When the sun goes down, Philadelphia transforms into a glistening jewel that contrasts the illuminated historic elegance with the glittering modern sleekness.

Boat House Row, the Art Museum, and Swan Fountain are even more beautiful at night!

See where Philadelphians kick back, relax and take in our city. From exciting new restaurants and cafés, to chic boutiques and galleries, to bowling clubs and martini lounges.

See the Philadelphia that today's Philadelphians have created alongside historic Philadelphia!

Date: Thursday, September 7 - Evening

Tour Length: 2.5 hours

Type of Tour: Combination bus and walking tour

Price per Person: \$50 – Regular / \$45 – Early Bird Savings

Philadelphia Old & New – Friday

The most comprehensive full-city tour, Philadelphia Then & Now, is a fully guided tour via deluxe transportation through four centuries of art, architecture and Philadelphia's growth to a modern metropolis.

Beginning before 1776, hear the stories of the people, places and things that made Colonial Philadelphia the seat of government for the young nation and one of the largest English speaking cities in the world.

See such sites as the Liberty Bell, Independence Hall, Congress Hall, Betsy Ross House, Franklin's grave, Christ Church, Elfreth's Alley and the neighborhood of Society Hill. Embracing the modern day, we will visit neighborhoods where the Founding Fathers' lived and see how contemporary Philadelphians have made them their own.

Going beyond the colonial period, visit the bustling business district, Museum Mile of the Benjamin Franklin Parkway, the famous Rocky steps, Philadelphia's vibrant theater district, Antique Row, and much more.

Off-coach photo opportunities will occur throughout the tour.

Date: Friday, September 8

Tour Length: 3 hours

Type of Tour: Bus Tour with several off-coach photo opportunities

Price per Person: \$65 – Regular / \$59 – Early Bird Savings

GUEST HOSPITALITY PROGRAM

Registered guests of the Annual Meeting & Course are welcome to attend the Welcome Reception on Wednesday, September 6 and the Farewell Banquet on Friday, September 8 for the additional cost of \$50. All registered guests are also welcome to meet and plan their days over a continental breakfast in the Guest Hospitality Suite at the Philadelphia Marriott Downtown, courtesy of the SRS. The Guest Hospitality Suite will be open Thursday, September 7 through Saturday, September 9.

HOUSING INFORMATION

A block of rooms is being held courtesy of the Scoliosis Research Society for the 52nd Annual Meeting & Course at the headquarters hotel and meeting location, the Philadelphia Marriott Downtown.

Attendees are encouraged to book their reservations at the SRS headquarters hotel. Staying at the headquarters hotel not only allows attendees to take advantage of special discounted room rates, but also puts them in close proximity to all meeting events for maximum interaction with fellow attendees and faculty and a hassle-free experience. Additionally, booking in the block helps the Society avoid penalties for not filling its hotel block, which keeps meeting expenses and thus registration rates lower, and achieve a consistent hotel booking history that helps SRS continue to negotiate the lowest room rates possible for future meetings.

SRS will not make hotel reservations. All reservations, cancellations and changes to reservations should be made directly with the hotel. All cancellation and refund policies are at the discretion of the hotel.

Housing Opens: April 15, 2017

Housing Reservation Deadline: August 13, 2017

Reservation Link: <http://www.srs.org/am17/housing>

Philadelphia Marriott Downtown

1201 Market Street

Philadelphia, PA 19107

Room Rates:

Single/Double - \$199 USD

Additional Person - \$20 USD

Hotel room rates are subject to applicable state and local taxes in effect at the time of check-out. The group room rate will be applicable three (3) days prior and three (3) days post the meeting dates.

Hotel reservations should be made early, as space is available on a first-come, first-served basis. All attendees must make their own hotel reservations; reservations must be made by August 13, 2017.



MEETING OUTLINE

Monday, September 4, 2017	
8:00 - 16:00	Board of Directors Meeting
17:00 - 19:00	Incoming Committee Chair Reception (by invitation only)
Tuesday, September 5, 2017	
7:00 - 17:00	SRS Committee Meetings
13:00 - 18:20	Hibbs Society Meeting
14:00 - 17:00	Registration Open
19:00 - 22:00	SRS Leadership Dinner (by invitation only)
Wednesday, September 6, 2017	
6:30 - 18:00	Registration Open/ E-Posters Open
7:45 - 12:00	Pre-Meeting Course – Morning Sessions
12:10 - 13:10	Lunchtime Symposia
13:20 - 16:30	Pre-Meeting Course – Afternoon Sessions
16:45 - 17:45	Case Discussions
18:00 - 19:15	Opening Ceremonies
19:15 - 21:00	Welcome Reception
Thursday, September 7, 2017	
6:30 - 16:00	Registration Open/ E-Posters Open
6:30 - 7:45	Members Business Meeting
	Non-Members Continental Breakfast
7:30 - 10:00	Guest Hospitality Suite
7:55 - 12:30	Scientific Program
12:30 - 13:30	Half-Day Course Lunch
	Member Information Session
13:30 - 16:30	Half-Day Courses
Friday, September 8, 2017	
6:30 - 17:00	Registration Open/ E-Posters Open
6:30 - 7:45	Members Business Meeting
	Non-Members Continental Breakfast
7:30 - 10:00	Spouse Hospitality Suite
7:55 - 11:50	Scientific Program
12:00 - 13:00	Lunchtime Symposia
13:15 - 17:15	Scientific Program
19:00-23:00	Farewell Banquet
Saturday, September 9, 2017	
6:30 - 11:00	Registration Open/ E-Posters Open
6:30 - 7:45	Members Business Meeting
	Non-Members Continental Breakfast
7:55 - 12:45	Scientific Program
13:00 - 15:30	Board of Directors Meeting

PRE-MEETING COURSE

WEDNESDAY, SEPTEMBER 6, 2017

8:00 - 16:30

A Multidisciplinary Approach to Global Spine Care

Chair: Praveen V. Mummaneni, MD

Co-chair: John R. Dimar, II, MD & Suken A. Shah, MD

8:00 - 10:16

Session 1: Pre-Op

Moderators: John R. Dimar, II, MD & Praveen V. Mummaneni, MD

- | | |
|---------------|---|
| 8:00 - 8:05 | Introduction to the Pre-Meeting Course
<i>Kenneth MC Cheung, MD</i> |
| 8:05 - 8:12 | Protocol for Preoperative Medical Clearance
<i>Geno Merli, MD</i> |
| 8:12 - 8:19 | Pediatric Pulmonary Pitfalls and Prevention of Pulmonary Complications in Pediatric Deformity Surgery
<i>Aaron C. Chidekel, MD</i> |
| 8:19 - 8:26 | Identifying Adults Who Need Pulmonary Clearance
<i>Gregory Kane, MD</i> |
| 8:26 - 8:33 | The Critical Need For Obesity & Diabetic Management Preoperatively
<i>John R. Dimar, II, MD</i> |
| 8:33 - 8:43 | Discussion |
| 8:43 - 8:50 | Pediatric Patients with Bone Quality Issues & How to Correct the Problem
<i>Michael To, FRCSEd (Ortho), FHKC</i> |
| 8:50 - 8:57 | Optimization of Bone Health in Adult Patients in Preparation for Surgery
<i>Joseph M. Lane, MD</i> |
| 8:57 - 9:04 | Potential Hematological Problems and Planning for Blood Loss in Complex Spinal Deformity Surgery (Multidisciplinary Preop Optimization)
<i>Rajiv K. Sethi, MD</i> |
| 9:04 - 9:11 | Why Anesthesia Clearance is Critical Preoperatively for Complex Adult Spinal Deformity: Stress Dose Steroids, Protocol for Narcotic Usage (Lidocaine Drips)
<i>Bhiken I. Naik, MBBCh, MD</i> |
| 9:11 - 9:21 | Discussion |
| 9:21 - 9:28 | Assessment & Management of Nutritional Status to Maximize Surgical Outcomes in Complex Spinal Surgery
<i>Munish C. Gupta, MD</i> |
| 9:28 - 9:35 | Preoperative Planning for Instrumentation Application in Deformity Surgery for Children
<i>Suken A. Shah, MD</i> |
| 9:35 - 9:42 | Preoperative Planning for Instrumentation Application in Deformity Surgery for Adults
<i>Sigurd H. Berven, MD</i> |
| 9:42 - 9:49 | Assembling Superior Team to Minimize Complications and Maximize Surgical Outcomes
<i>Todd J. Albert, MD</i> |
| 9:49 - 10:00 | Discussion |
| 10:00 - 10:16 | Break |

PRE-MEETING COURSE

WEDNESDAY, SEPTEMBER 6, 2017

8:00 - 16:30

A Multidisciplinary Approach to Global Spine Care

10:16 - 12:20

Session 2: Intra-Op

Moderators: Christopher I. Shaffrey, MD & Suken A. Shah, MD

10:16 - 10:24 Techniques for Reducing Intra-Operative Blood Loss in Pediatric & Adult Deformity
Burt Yaszay, MD

10:24 - 10:32 Neuromonitoring Alert: Stepwise Management of Lost Signals...Now What?"
Praveen V. Mummaneni, MD

10:32 - 10:40 Surgical Site Infection (SSI) Algorithm to Avoid A Never Event
James S. Harrop, MD

10:40 - 10:48 Management of a Catastrophic Intra-Operative Events: The WHO Standard of Care in Handling these Events
Lawrence G. Lenke, MD

10:48 - 10:56 Alternative Strategies of Instrumentation: Know the Full Array of Spinal Fixation & Fusion Techniques When All Else Fails
Christopher I. Shaffrey, MD

10:56 - 11:06 Discussion

11:06 - 11:28 Case Presentation Pairing 2 Cases of How the Use of Checklists Can Prevent Intra-Operative Complications: Pediatric and Adult

Moderator: Suken A. Shah, MD

Panel: Douglas C. Burton, MD; S. Rajasekaran, MD, FRCS, MCh, PhD; Jason W. Savage, MD; Lindsay M. Andras, MD

11:29 - 11:51 Case Presentation Pairing 2 Cases of Neuromonitoring Alerts: Pediatric and Adult
Moderator: Justin S. Smith, MD, PhD

Panel: Paul Park, MD; Burt Yaszay, MD; Isaac O. Karikari, MD

11:52 - 12:14 Case Presentation Pairing 2 Case of Asystole: How to Do Effective Crisis Management To Achieve Successful Resuscitation

Moderator: Kit Song, MD, MHA

Panel: Michael D. Daubs, MD; Marco Braydo-Bruno, MD; Scott S. Russo, Jr., MD

12:14 - 12:20 Discussion

12:35 - 13:35

Lunchtime Symposia

See page 18 for additional information.

PRE-MEETING COURSE

WEDNESDAY, SEPTEMBER 6, 2017

8:00 - 16:30

A Multidisciplinary Approach to Global Spine Care

13:45 - 16:30

Session 3: Post-Op

Moderators: Charles H. Crawford, III, MD & Marinus de Kleuver, MD, PhD

- | | |
|---------------|--|
| 13:45 - 13:53 | How to Prevent & Treat Cardiopulmonary Failure Following Surgery
<i>Frances Mae West, MD</i> |
| 13:53 - 14:01 | The Threshold for Treatment of Post-Operative Anemia and Coagulopathies
<i>Ronald A. Lehman, Jr., MD</i> |
| 14:01 - 14:09 | Early Identification & Management of Post-Op Infections: Short & Long Term Ramifications
<i>Michael P. Glotzbecker, MD</i> |
| 14:09 - 14:17 | Acute Post-Operative Renal Failure: Prevention, Identification and Treatment
<i>Michael P. Kelly, MD, MSc</i> |
| 14:17 - 14:27 | Discussion |
| 14:27 - 14:35 | Post-Op Pain: In Today's Climate When is it Necessary to Involve a Pain Management Specialist?
<i>Bhiken I. Naik, MBChB, MD</i> |
| 14:35 - 14:43 | Proximal Junctional Kyphosis: Prevention and Management
<i>David W. Polly, Jr., MD</i> |
| 14:43 - 14:51 | Enhanced Recovery After Surgery (ERAS)
<i>Benny T. Dahl, MD, PhD, DMSci</i> |
| 14:51 - 14:59 | Rapid Recovery Pathway for Adolescent Idiopathic Scoliosis
<i>Peter O. Newton, MD</i> |
| 14:59 - 15:07 | Making the Best Use of Inpatient Management Trends: Safely Minimizing Hospital Stay Following Surgery
<i>Alexander R. Vaccaro, MD, PhD, MBA</i> |
| 15:07 - 15:17 | Discussion |
| 15:17 - 15:32 | Break |
| 15:32 - 15:50 | <u>Case Presentation Series</u> Early Instrumentation Failure: How Poor Planning Leads to Unforeseen Complications – Pediatric & Adult Cases
<i>Moderator: Ian J. Harding, BA, FRCS (Orth)</i>
<i>Panel: Morio Matsumoto, MD; Yan Wang, MD; Robert H. Cho, MD</i> |
| 15:50 - 16:05 | <u>Case Presentation Series</u> How a Missed Post-Operative Complication Can Lead to Cascading Consequences: Pediatric & Adult Cases
<i>Moderator: Mark Weidenbaum, MD</i>
<i>Panel: Richard H. Gross, MD; Paul T. Rubery, Jr., MD; Nathan H. Lebowitz, MD</i> |
| 16:05 - 16:25 | <u>Case Presentation Series</u> Nothing Trumps Good Results Better Than Long Term Follow-up (Delayed Complications – PJK and Pseudarthrosis)
<i>Moderator: Shay Bess, MD</i>
<i>Panel: Manabu Ito, MD, PhD; Frank La Marca, MD; Kariman Abelin Genevois, MD, PhD</i> |
| 16:25 - 16:30 | Discussion |
| 16:30 | Adjourn |

CASE DISCUSSION PROGRAM

WEDNESDAY, SEPTEMBER 6, 2017

16:45 - 17:45

These sessions are open to all Annual Meeting delegates. Pre-registration is not required and no additional fee applies.

The Case Discussion sessions allow an opportunity to present unique and challenging clinical cases to the SRS with a panel of experts present to review and discuss each case and the clinical issues that are highlighted, as well as answer questions from audience participants. The panels will also prepare case studies for presentation and discussion, as time allows.

Case Discussion 1: Innovative Solutions

Moderators: Munish C. Gupta, MD and David S. Marks, FRCS

1A: 3D Printed, Patient Specific Drill Guides Represent an Alternative Form of Intraoperative Navigation in Complex Spinal Reconstruction Surgery

George A. Frey

1B: The role of magnetically-controlled growing rods as a temporary internal brace for treatment of adolescent idiopathic scoliosis with failed bracing

Jason Pui Yin Cheung, MBBS (HK); Kenny Kwan, BMBCh(Oxon), FRCSEd; Kenneth MC Cheung, MD

1C: Temporary Internal Distraction Facilitates Surgical Reduction of High Grade Spondylolisthesis.

Harry L. Shufflebarger, MD; Jahangir K. Asghar, MD

1D: 20 screws in The Treatment of 4 Patients – Decision Making and Surgical Strategies in Resource Limited Countries

Kin C. Mak, BSc, MBBS, FRCS; Kenneth MC Cheung, MD

Case Discussion 2: Tumor & Syndromic Spine

Moderators: John Dormans, MD and Ibrahim Obeid, MD

2A: Two cases of paralysis secondary to aneurysmal bone cysts (ABC) with complete neurologic recovery

Aaron Beck, MD; David L. Skaggs, MD, MMM; Erin Kiehna, MD; Lindsay M. Andras, MD

2B: Gorham's disease of dorsolumbar spine – Can we predict prognosis?

Hardik Suthar; Pramod Sudarshan, MS; Vamsi Krishna Varma Penumatsa; Appaji Krishnan; Sajan Hegde, MD

2C: Kyphoscoliosis in Metatropic Dysplasia Treated with Staged Anterior Release and Magnetically Controlled Growing Rods (MCGR)

Jennifer M. Bauer, MD; William G. Mackenzie, MD

2D: Ten-year follow-up of Jarcho-Levin Syndrome with Thoracic Insufficiency treated by prosthetic rib/rib based construct-magnetically controlled growing rod hybrid

Kenny Kwan, BMBCh(Oxon), FRCSEd; Jason Pui Yin Cheung, MBBS (HK); Kenneth MC Cheung, MD

Case Discussion 3: Unusual Conditions

Moderators: Vedat Deviren, MD and Ulf R. Liljenqvist, MD

3A: Management of the Most Severe Dystrophic Cervical Kyphosis (140 degrees) in Neurofibromatosis Type 1

Yat Wa Wong, MD; Jason Pui Yin Cheung, MBBS (HK); Keith D K Luk, MD; Kenneth MC Cheung, MD

3B: U-type Sacral Fracture and Hardware Failure After Posterior Spinal Corrective Surgery Using S2-Alar-Iliac (S2AI) Fixation in a Patient with Osteoporosis.

Scott S. Russo, Jr., MD; Matthew W. Wilkening, MD; Jordan, R Nester, MS4

3C: Late Atraumatic Fusion Mass Fractures Occurring Between Non-bridged Constructs in Patients Requiring Fusions Distal to AIS Fusions

Stephen J. Lewis, MD, MSc, FRCSC; Tan Chen, MD; Mohammed Obeidat; Anupreet Bassi, MD; So Kato, MD

3D: Vascularized Clavicle Graft Rotated into an Anterior Cervical Defect on a Sternocleidomastoid Pedicle: Case Report

Michael Bohl, MD; Jay D. Turner, MD; Udaya K. Kakarla, MD; Randall Porter, MD

EDUCATIONAL PROGRAM

TUESDAY, SEPTEMBER 5, 2017 – HIBBS SOCIETY PROGRAM*

An additional registration fee of \$50 applies for the Hibbs Society Program.

13:00 - 18:20

Over the years, the Russell A. Hibbs Society, a group formed in 1947 as an international travel club for continuing medical education and furthering orthopaedic knowledge, has held an educational meeting at the SRS Annual Meeting. These meetings address difficult and complex issues that do not lend themselves to the usual kind of scientific presentations. The meeting encourages interaction among international participants and new ideas, new concepts and reports on personal experience.

13:00 - 13:05 Introduction: Hibbs and the Hibbs Program

Robert W. Gaines, Jr., MD

13:05 - 14:45 Complications in Early Onset Scoliosis Surgery

Moderator: Brice Ilharreborde, MD, PhD

13:05 - 13:15 Differences between a Good Cast and a Bad Cast in EOS
Noriaki Kawakami, MD, DMSc

13:15 - 13:25 Bad Indication for Growth Sparing Techniques in EOS
Jean Dubousset, MD

13:25 - 13:35 Incidence and Management of Unplanned Surgeries in Growth Sparing Techniques
Behrooz A. Akbarnia, MD

13:35 - 13:50 Discussion

13:50 - 14:00 How to Avoid PJK in Growth Sparing Techniques?
David L. Skaggs, MD, MMM

14:00 - 14:10 Transition from Growth Sparing Techniques to Definitive Fusion
Hilali H. Noordeen, FRCS

14:10 - 14:20 Failures of the Tethering Techniques; How and Why?
Amer F. Samdani, MD

14:20 - 14:30 TBD
Stuart L. Weinstein, MD

14:30 - 14:50 Discussion

14:50 - 15:05 Break

15:05 - 16:35 Complications in AIS surgery

Moderator: Kota Watanabe, MD, PhD

15:05 - 15:15 Who is the Worst Candidate for Brace Treatment
Stuart L. Weinstein, MD

15:15 - 15:25 Severe Neglected AIS, is VCR Needed?
Lawrence G. Lenke, MD

15:25 - 15:35 Severe Neglected AIS, Anterior Fusion Better?
Hee-Kit Wong, MD

15:35 - 15:50 Discussion

15:50 - 16:00 What to Achieve in AIS Surgery: The Fusion Block Concept
Keith DK Luk, MD

16:00 - 16:10 Failure of Selecting UIV, Unbalanced Shoulder
Mun Keong Kwan, MBBS, MS Orth

16:10 - 16:20 Failure of Selection LIV in Selective Thoracic Fusion
Morio Matsumoto, MD

16:20 - 16:35 Discussion

16:35 - 16:50 Break

EDUCATIONAL PROGRAM

16:50 - 18:20	Complications in Adult Deformity Surgery from Cervical to Lumbar Spine <i>Moderator: Bangping Qian, MD</i>
16:50 - 17:00	Complications in Cervical Osteotomy <i>Daniel Riew, MD</i>
17:00 - 17:10	Latest Concepts in Treating Cervical Deformity <i>Todd J. Albert, MD</i>
17:10 - 17:20	Discussion
17:20 - 17:30	Adult Spine Deformity Surgery: Measuring Outcomes and Development of a Core Outcome Set <i>Marius de Kleuver, MD, PhD</i>
17:30 - 17:40	Preoperative Convex Imbalance: A Risk Factor for Postoperative Coronal Decompensation in Adult Scoliosis <i>Yong Qiu, MD</i>
17:40 - 17:50	Neurological Comorbidities Predict Proximal Junctional Failure <i>Steve D. Glassman, MD</i>
17:50-18:00	How to Recognize Factors that Could Lead to Postoperative Radiculopathy when Inducing Lordosis <i>Ronald A. Lehman, Jr., MD</i>
18:00 - 18:20	Discussion
18:20	Adjourn

**Preliminary program, subject to change.*

WEDNESDAY, SEPTEMBER 6, 2017 – LUNCHTIME SYMPOSIA

12:35 - 13:35

Developing Your Academic Footprint

Session focusing on the education of both young and more experienced researchers on how to produce better quality studies and scientific works.

Chairs: Olavo B. Letaif, MD, MSc & David W. Polly, Jr. MD

12:35 - 12:43	Starting a Deformity Study: 1. Asking a Good Research Question. 2. Collecting Outcomes Data <i>Stuart L. Weinstein, MD</i>
12:43 - 12:50	Researching Tools: Internet/Database Searches, Tools for Radiographic Analysis, Helpful Software <i>Charla R. Fischer, MD</i>
12:50 - 12:58	Assembling the Researching Environment: 1. Researching Team. 2. Study Groups. 3. Institutional Facilities <i>Leah Y. Carreon, MD, MSc</i>
12:58 - 13:06	Organizing the Data, the Protocols and the Follow Up <i>A. Noelle Larson, MD</i>
13:06 - 13:13	Choosing the Appropriate Journal or Meeting for Your Paper <i>Paul D. Sponseller, MD, MBA</i>
13:13 - 13:20	Reviewer Perspective of the Most Common Mistakes and Flaws in a Paper <i>Ferran Pellisé, MD, PhD</i>
13:20 - 13:27	Pearls and Tips to Write a Good Paper and Abstract <i>John E. Lonstein, MD</i>
13:27 - 13:35	Closing remarks, Discussion, and Questions <i>Olavo Letaif, MD, MSc; David W. Polly, Jr., MD</i>

Intraspinal Anomalies and Spine Deformity

This symposium will focus on the management of spinal deformity patients who harbor an intraspinal anomaly. Through a case based approach, the topics covered will include those patients with Chiari malformation, tethered cord, and split cord malformation. We will also explore the role of spinal column shortening in these patients.

Chairs: Amer F. Samdani, MD & Ahmet Alanay, MD

12:35 - 12:40	Welcome and Introduction <i>Amer F. Samdani, MD</i>
12:40 - 12:50	Most Common Intraspinal Anomalies <i>Steven W. Hwang, MD</i>
12:50 - 13:00	Chiari/Syrinx and Scoliosis: Management Strategies <i>Daniel J. Sucato, MD, MS</i>
13:00 - 13:10	Split Cord Malformation: When to Remove Prior to Deformity Correction <i>Muharrem Yazici, MD</i>
13:10 - 13:20	Severe Deformity and Intraspinal Anomaly: Role of VCR <i>Amer F. Samdani, MD</i>
13:20 - 13:35	Panel Case Discussion

EDUCATIONAL PROGRAM

WEDNESDAY, SEPTEMBER 6, 2017 – LUNCHTIME SYMPOSIA

12:35 - 13:35

Non-Operative Treatment of Adult Spinal Deformity

The symposium will focus on multidisciplinary evaluation and treatment of the symptomatic adult spinal deformity patient and will include an evidence based review of non-operative treatment options.

Chairs: Richard Hostin, Jr., MD & Frank J. Schwab, MD

- 12:35 - 12:45 Where Does the Literature Stand on Non-operative Treatment Modalities of Adult Spinal Deformity in 2017? *Richard Hostin, Jr., MD*
- 12:45 - 12:55 Review of Recent Multicenter Non-operative Data from Prospective Multicenter Database / Where is Future Research Headed? *Frank J. Schwab, MD*
- 12:55 - 13:05 Physical Therapy Evaluation and Treatment Options for the Adult Spinal Deformity Patient *Pamela R. Morrison, MS, PT, BS, DHS*
- 13:05 - 13:15 Interventional and Non-interventional Pain Management Options for the Adult Spinal Deformity Patient *Allen S. Chen, MD, MPH*
- 13:15 - 13:35 Case Panel and Discussion *Richard Hostin, Jr., MD*

FRIDAY, SEPTEMBER 8, 2017 – LUNCHTIME SYMPOSIA

12:00 - 13:00

SRS GOP Mission Trips. How to be Effective and Safe at a Reduced Cost

During this lunch symposium you will hear from members of the Global Outreach Committee and representatives from SRS-GOP Endorsed Sites about tips and tools that can help us all to make care effective and safe at a reduced cost in GOP Missions and Activities. If you have ever thought about volunteering your skills and knowledge in another country, then you will find this symposium informative. If you have already been involved in GOP activity, this symposium will be an excellent opportunity to network and learn how to increase safety and cost-effectiveness in your next GOP activity.

Chairs: Ferran Pellisé, MD, PhD; J. Michael Wattenbarger, MD

- 12:00 - 12:05 Introduction *Ferran Pellisé, MD, PhD*
- 12:05 - 12:13 What It Means to Get Involved in GOP. People's Experiences of Their "First Trip". *Kenneth J. Paonessa, MD*
- 12:13 - 12:21 How to Build a Sustainable Outreach Site from the Ground-Up *Gregory M. Mundis, Jr., MD*
- 12:21 - 12:29 Pearls to Minimize Clinical Safety Challenges in a SRS Outreach Site *Anthony S. Rinella, MD*
- 12:29 - 12:37 The Challenge of Severe Neglected Deformities. How to Be Effective and Safe with Low Resources *Obeneba Boachie-Adjei, MD*
- 12:37 - 12:45 Pearls for the Treatment of Early Onset Scoliosis in Underserved Areas *Francisco Javier Sanchez Perez-Grueso, MD*
- 12:45 - 13:00 Discussion

Research Grant Outcomes

The SRS Research Grant Committee presents a Lunchtime Symposium giving recent grant recipients an opportunity to present and discuss the fruits of their labors. After presenting their final results, each project will be discussed in detail. There will also be an opportunity to discuss the grant funding application process with the members of the SRS Research Grants Committee

Patrick J. Cahill, MD

- 12:00 - 12:05 Introduction *Patrick J. Cahill, MD*
- 12:05 - 12:12 SRS Medtronic Research Fellowship Report *So Kato, MD*
- 12:12 - 12:19 Evidence-Based Algorithm for the Surgical Treatment of Lumbosacral Spondylolisthesis *Jean-Marc Mac-Thiong, MD, PhD*
- 12:19 - 12:26 Validation of 3D Ultrasound Measurements with EOS System on Children with AIS *Edmond H. Lou, PhD, PEng*
- 12:26 - 12:34 3D Biomechanical Analysis of the Spontaneous Lumbar Curve Correction After Selective Thoracic Fusion in Adolescent Idiopathic Scoliosis *Saba Pasha, PhD, MS*
- 12:34 - 12:41 Optimization of Implant Density in AIS Instrumentation Using a Computerized Spine Simulator *Xiaoyu Wang, PhD*
- 12:41 - 12:49 How Does SKI-1 Regulate Somitogenesis? *Jeffrey P. Gorski, PhD*
- 12:49 - 13:00 Discussion

EDUCATIONAL PROGRAM

FRIDAY, SEPTEMBER 8, 2017 – LUNCHTIME SYMPOSIA

12:00 - 13:00

Adult Spinal Deformity for Early Career Deformity Surgeons

The evaluation and management of patients with adult spinal deformity can be a challenging and daunting task for even the most experienced deformity surgeon. Indications, understanding global spinal alignment, risk assessment and patient optimization prior to surgery, surgical options and managing postoperative complications are constantly evolving. This symposium seeks to provide guidance and guidelines to early career deformity surgeons when facing challenging decisions during the care of patients with symptomatic adult spinal deformity.

Chair: Ripul R. Panchal, DO, FACOS, FACS and Ram Mudiya, MD, MBA

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|---------------|---|
| 12:00 - 12:05 | Introduction <i>Ripul R. Panchal, DO, FACOS, FACS and Ram Mudiya, MD, MBA</i> |
| 12:05 - 12:15 | Pre-op Patient Assessment, When is it Over My Head and When Do I Ask for Help? <i>Rajiv K. Sethi, MD</i> |
| 12:15 - 12:25 | Assessing Radiographic Parameters, Balancing the Art and Science <i>Saamyajit Basu, MD</i> |
| 12:25 - 12:35 | Role of MIS in ASD Correction <i>Neel Anand, MD</i> |
| 12:35 - 12:45 | Intraoperative - What Keeps Me Out of Trouble and How do I Get Out of it? <i>Munish C. Gupta, MD</i> |
| 12:45 - 12:55 | Women in Spine – Lessons Learned and Advice to Young Female Spine Surgeons <i>Laurel C. Blakemore, MD and Evalina L. Burger, MD</i> |
| 12:55 - 13:00 | Questions and Discussion |

EDUCATIONAL PROGRAM

THURSDAY, SEPTEMBER 7, 2017 – HALF-DAY COURSES

13:30 - 16:30

MIS Spinal Surgery – An Updated Global Perspective

Chairs: Praveen V. Mummaneni, MD & Gregory M. Mundis Jr.

13:30 - 15:10 Section I

Moderator: Gregory M. Mundis Jr.

13:30 - 13:38 Minimally Invasive Spine Surgery: MISDEF Algorithm *Praveen V. Mummaneni, MD*

13:38 - 13:46 How Do We Define MIS in 2017 *Behrooz A. Akbarnia, MD*

13:46 - 13:54 Spinal Balance- Do These Concepts Apply to MIS Deformity? *Virginie Lafage, PhD*

13:54 - 14:00 Discussion

14:00 - 14:08 MIS Approach Selection: When to Use LLIF? *Neel Anand, MD*

14:08 - 14:16 MIS Approach Selection: When to Use TLIF? *Pierce D. Nunley, MD*

14:16 - 14:24 MIS Approach Selection: When are MIS Screws Appropriate and When Open? *Dean Chou, MD*

14:24 - 14:30 Discussion

14:30 - 14:38 Pitfalls of Flatback Creation with MIS Deformity Surgery *Khoi D. Than, MD*

14:38 - 14:46 What Impact Do MIS Techniques Have on PJK in Deformity Surgery *Paul Park, MD*

14:46 - 14:54 What Are the Limits of MIS Surgery in 2017 *Kai-Ming G. Fu, MD, PhD*

14:54 - 15:02 What Are the Challenges to Adopting MIS Surgery in a Deformity Practice? *Frank La Marca, MD*

15:02 - 15:10 Discussion

15:10 - 15:35 Section II: DEBATE: 35 Degree Degenerative Scoliosis

Moderator: Praveen V. Mummaneni, MD

15:10 - 15:20 Open Techniques are Best (10 min) *Alexander R. Vaccaro, III, MD, PhD, MBA*

15:20 - 15:30 MIS Techniques are Superior (10 min) *Juan S. Uribe, MD*

15:30 - 15:35 Discussion

15:35 - 16:30 Section III: Techniques and Complications (education with video)

15:35 - 15:40 Lateral Lumbar Interbody Fusion *Robert K. Eastlack, MD*

15:40 - 15:45 MIS Anterior Lumbar Interbody Fusion *Henry F.H. Halm, MD*

15:45 - 15:50 Oblique Lateral Interbody Fusion *Ronald A. Lehman, Jr., MD*

15:50 - 15:55 MIS Screws and Rod Passage *D. Greg Anderson, MD*

15:55 - 16:05 Discussion

16:05 - 16:15 Complications of MIS Anterior/Lateral Approaches *Gregory M. Mundis Jr., MD*

16:15 - 16:25 Complications of MIS Posterior Approaches *Richard G. Fessler, MD, PhD*

16:25 - 16:30 Discussion

16:30 Adjourn

EDUCATIONAL PROGRAM

THURSDAY, SEPTEMBER 7, 2017 – HALF-DAY COURSES

13:30 - 16:30

Spinal Alignment: Goals, Planning and Pathologies

Chairs: Sigurd H. Berven, MD and Cristina Sacramento Dominguez, MD, PhD

- 13:30 - 13:32 Section 1 Introduction: Spinal Alignment – Why is it Important?
Impact on Health Status and Goal of Surgical Planning *Sigurd H. Berven, MD*
- 13:32 - 13:40 Changes in Alignment with Age- From Pediatric to Adult *Jean Dubousset, MD*
- 13:40 - 13:48 Hip Pathologies and Sagittal Alignment *S. Rajasekaran, MD, FRCS, MCh, PhD*
- 13:48 - 13:56 Normal Variation of Spinopelvic Balance and Association with Degenerative Pathologies *Pierre Roussouly, MD*
- 13:56 - 14:04 Thoracolumbar Alignment- What Measures are Important and Why? *Frank J. Schwab, MD*
- 14:04 - 14:12 Looking Beyond C7- Cervical Alignment *Christopher P. Ames, MD*
- 14:12 - 14:20 Sagittal Deformity in the Cervical Spine- Etiologies and Presentations. Surgical Planning. *K. Daniel Riew, MD*
- 14:20 - 14:28 Thoracolumbar and Cervico-Thoracic Deformity: Which to Treat First? *Eric O. Klineberg, MD*
- 14:28 - 14:48 Discussion
- 14:48 - 14:50 Section 2 Introduction: Junctional Pathologies and Sagittal Alignment *Cristina Sacramento Dominguez, MD, PhD*
- 14:50 - 14:58 Sagittal Alignment and Junctional Pathology; PJK, PJF *Mitsuru Yagi, MD, PhD*
- 14:58 - 15:06 Biomechanics of PJK *Richard H. Gross, MD*
- 15:06 - 15:14 Influence of Cervical and Head Alignment on Development of PJK *Han Jo Kim, MD*
- 15:14 - 15:22 Discussion
- 15:22 - 15:30 Influence of Bone Quality on the Development of PJF. How to Improve Bone Biology? *Serena S. Hu, MD*
- 15:30 - 15:38 Influence of Muscle and Neuromuscular Disease on PJK Role of Exercise and PT *Daniel H. Chopin, MD*
- 15:38 - 15:46 Vertebral Augmentation and PJK *Theodore J. Choma, MD*
- 15:46 - 15:54 The Decrease of the Transition Forces at the End of the Construction of the Instrumentation *Patrick J. Cahill, MD*
- 15:54 - 16:02 Can the Technology Replace the Extensor Muscles of the Spine? Is it Possible to Make a Back Strap? *Vedat Deviren, MD*
- 16:02 - 16:22 Discussion
- 16:22 - 16:26 Case Presentation *Sigurd H. Berven, MD*
- 16:26 - 16:30 Case Presentation *Munish C. Gupta, MD*
- 16:30 Adjourn

EDUCATIONAL PROGRAM

THURSDAY, SEPTEMBER 7, 2017 – HALF-DAY COURSES

13:30 - 16:30

Growth Friendly Techniques for Early Onset Scoliosis (EOS): Is Quality of Life the Cost for a Taller, Straighter Spine?

Chairs: Suken A. Shah, MD and Muharrem Yazici, MD

- 13:30 - 13:32 Introduction and Objectives *Suken A. Shah, MD*
- 13:32 - 13:38 How Are We Doing? Compared to What? Analysis of Outcomes and QoL *Michael G. Vitale, MD, MPH*
- 13:38 - 13:44 Repetitive Effect of Anesthetics on the Young Brain *Tetsu Uejima, MD*
- 13:44 - 13:50 Questions / Discussion
- 13:50 - 13:56 The Impact of Casting: Spine, Child and Family *James O. Sanders, MD*
- 13:56 - 14:02 Post Traumatic Stress During Treatment (Child and Family) *Peter G. Gabos, MD*
- 14:02 - 14:07 A Parent's Perspective of Growth Friendly Treatment for EOS *TBD*
- 14:07 - 14:14 Questions / Discussion
- 14:14 - 14:28 Debate: Pro: Magnetically Controlled Growth Rods are A Game Changer *Colin Nnadi, FRCS (Orth)*
Debate: Con: MCGR is a Flash in the Pan...TGR is Here to Stay *Laurel C. Blakemore, MD*
(5 min talks followed by discussion)
- 14:28 - 14:30 Live Webcast Closing Remarks and Transition to Regular Course *Suken A. Shah, MD*
- 14:30 - 14:36 Comparison of Growth Friendly Techniques in Terms of Outcome: Is One Better than the Rest? *John B. Emans, MD*
- 14:36 - 14:42 Image Gently: Reduction of Radiation in Kids with EOS *A. Noelle Larson, MD*
- 14:42 - 14:50 Cost Analysis of Treatment in EOS *Peter F. Sturm, MD*
- 14:50 - 14:57 Questions / Discussion
- 14:57 - 15:04 Pulmonary Status at the End of Treatment *Gregory Redding, MD*
- 15:04 - 15:11 The Fork at the End of the Growth Friendly Road: Final Fusion or Observation? *Paul D. Sponseller, MD, MBA*
- 15:11 - 15:20 Questions / Discussion
- 15:20 - 16:20 Case Presentations with the Expert Panel *Moderator: Muharrem Yazici, MD*
A Journey from Childhood to Adolescence with Growth Friendly Surgery: "Yin and Yang" *Charles E. Johnston, MD; Carol C. Hasler, MD; Burt Yaszay, MD; David M. Farrington, MD; David L. Skaggs, MD, MMM; Hazem B. El Sebaie, MD, FRCS*
- 16:20 - 16:25 Questions / Discussion
- 16:25 - 16:30 Conclusion and Adjourn *Muharrem Yazici, MD*

SCIENTIFIC PROGRAM

THURSDAY, SEPTEMBER 7, 2017

Session 1: Adolescent Idiopathic Scoliosis

07:55 - 09:49

Moderators: René Castelein, MD, PhD; Peter O. Newton, MD

07:55 - 08:00

Welcome

08:00 - 08:04

Paper #1: Correlation of Lowest Level of Instrumentation to Functional Outcomes and Risk of Further Spine Surgery in AIS with Minimum 40 Year Follow-up

Sarah T. Lander, MD; Caroline Thirukumaran; Krista Noble, BS; Ahmed Saleh, MD; Addisu Mesfin, MD; Paul T. Rubery, MD; James O. Sanders, MD

08:04 - 08:08

Paper #2: Mean 23 years follow-up study on the effects of lumbar muscular condition on curve progression after skeletal maturity in adolescent idiopathic scoliosis

Kei Watanabe, MD, PhD; Masayuki Ohashi, MD, PhD; Toru Hirano, MD, PhD; Hirokazu Shoji, MD; Tatsuki Mizouchi, MD; Naoto Endo, MD; Kazuhiro Hasegawa, MD, PhD

08:08 - 08:12

Paper #3: Impact of an Accelerated Discharge Pathway on Early Outcomes and Recovery Following Posterior Spinal Fusion for Adolescent Idiopathic Scoliosis: A Prospective Comparative Study

Nicholas D. Fletcher, MD; Joshua Murphy, MD; Patricia Bush; Heather Guerreso; Eva Habib, BSc; Michael L. Schmitz, MD; Firoz Miyanji, MD, FRCSC

08:12 - 08:21

Discussion

08:22 - 08:26

Paper #4: Thoracic-Only Fusions for Double (Type 3) and Triple (Type 4) Major Curves in AIS at a Minimum 5 Year Follow-Up: Are They Possible and Durable?

Lawrence G. Lenke, MD; Ronald A. Lehman, MD; Michael P Kelly, MD; Michael Vitale, MD, MPH; Baron Stuart Lonner, MD; Thomas J. Errico, MD; Randal R. Betz, MD; Suken A. Shah, MD; Harry L. Shufflebarger, MD; Peter O. Newton, MD; Kathleen M. Blanke, RN; Harms Study Group

08:26 - 08:30

Paper #5: Short fusion strategy can prevent left shoulder elevation with shorter fusion area in Lenke type 1A curve in mid-term follow up

Soya Kawabata, MD, PhD; Nobuyuki Fujita, MD, PhD; Mitsuru Yagi, MD, PhD; Naobumi Hosogane, MD; Narihito Nagoshi, MD, PhD; Osahiko Tsuji, MD, PhD; Ken Ishii, MD; Masaya Nakamura, MD, PhD; Morio Matsumoto, MD; Kota Watanabe, MD, PhD; Keio Spine Research Group

08:30 - 08:34

Paper #6: Ponte Osteotomies Increase the Risk of Neuromonitoring Changes in Surgery for Adolescent Idiopathic

Aaron J. Buckland, MBBS, FRACS; John Moon, BS; Randal R. Betz, MD; Baron Stuart Lonner, MD; Peter O. Newton, MD; Harry L. Shufflebarger, MD; Thomas J. Errico, MD; Harms Study Group

08:34 - 8:43

Discussion

08:44 - 08:48

Paper #7: New Sagittal Classification For AIS: Optimizing The Surgical Correction

Kariman Abelin Genevois, MD, PhD; Pierre Roussouly, MD

08:48 - 08:52

Paper #8: Reciprocal Relationship between Thoracic Kyphosis and Lumbo-Sacro-Pelvic Sagittal Alignment in Adolescent Idiopathic Scoliosis

Takuya Iimura, MD; Satoshi Inami, MD, PhD; Hiroshi Moridaira, MD; Daisaku Takeuchi, MD; Haruki Ueda, MD; Yo Shiba, MD; Makoto Ohe, MD; Futoshi Asano, MD; Hiromichi Aoki, MD; Yutaka Nohara, MD; Hiroshi Taneichi, MD, PhD

08:52 - 08:56

Paper #9: Defining a Core Outcome Set for Adolescent and Young Adult Patients With a Spinal Deformity. A Collaborative Effort for the Nordic Spine Registries

Marinus De Kleuver, MD, PhD; Sayf S.A. Faraj, PhD-student; Roderick Maurits Holewijn, PhD-student; David W. Polly, MD; Miranda L. Van Hooff, MS; Tsjitske M. Haanstra, PhD

08:56 - 09:05

Discussion

09:06 - 09:10

Paper #10: Preoperative SRS Pain Score is the Primary Predictor of Postoperative Back Pain after AIS Surgery

Steven W. Hwang, MD; Amer F. Samdani, MD; Tracey P. Bastrom; Peter O. Newton, MD; Baron Stuart Lonner, MD; Joshua M. Pahys, MD

SCIENTIFIC PROGRAM

THURSDAY, SEPTEMBER 7, 2017

- 09:10 - 09:14 **Paper #11: Back pain and its change after surgery in adolescents and young adults with adult idiopathic scoliosis (AIS)**
Tamas Fulop Fekete, MD; Anne F. Mannion, PhD; Frank S. Kleinstueck, MD; Markus Loibl, Fellow; Dezsoe J. Jeszenszky, MD, PhD
- 09:14 - 09:18 **Paper #12: Expanding AIS Gene Discovery: A Consortium-Based Meta-Analysis**
Anas M. Khanshour, PhD; John A Herring, MD; Shiro Ikegawa; Ikuyo Kou; Kota Watanabe, MD, PhD; You-Qiang Song; Keith D K Luk, MD; Kenneth MC Cheung, MD; Nancy Hadley Miller, MD; Erin E. Baschal, PhD; Cristina M Justice; Carol A. Wise, PhD
- 09:18 - 09:27 **Discussion**
- 09:28 - 09:32 **Paper #13: Intraspinal Pathology(ISP)in severe spinal deformity(SSD): A Ten-year MRI Review**
Ying Zhang, MD; Jingming Xie, MD; Ni Bi, MD; Zhiyue Shi, MD; Yingsong Wang, MD; Zhi Zhao, MD; Jie Zhang, MD; Tao Li, MD
- 09:32 - 09:36 **Paper #14: Prevalence and characteristics of Scoliosis in Patients Operated for Pectus Excavatum: A Radiographic Study of 326 Patients**
Sébastien Charosky, MD; Neil Upadhyay, MD; Iria Vazquez Vecilla; Pierre Moreno; Benjemin Moreno
- 09:36 - 09:40 **Paper #15: Mental Health and not Deformity Magnitude Correlate to Self Image in Adolescent Idiopathic Scoliosis**
Michael P Kelly, MD; Tracey P. Bastrom; Lawrence G. Lenke, MD; Michelle Claire Marks, PT, MA; Peter O. Newton, MD; Harms Study Group
- 09:40 - 09:49 **Discussion**

Session 2: Non-Operative Management, Natural History, & Spondylolisthesis

10:10 - 12:30

Moderators: Firoz Miyanji, MD, FRCSC; Yong Qiu, MD

- 10:10 - 10:14 **Paper #16: AIS Bracing Success is Influenced by Time In Brace: Comparative Effectiveness Analysis of BrA-IST and ISICO Cohorts**
Lori A. Dolan, PhD; Sabrina Donzelli, MD; Fabio Zaina, MD; Stefano Negrini, MD; Stuart L. Weinstein, MD
- 10:14 - 10:18 **Paper #17: Efficacy of Bracing for Main-lumbar vs Main-thoracic curves in patients with Adolescent idiopathic Scoliosis at Risser 0**
John Vorhies, MD; Lori Ann Karol, MD; John A Herring, MD
- 10:18 - 10:22 **Paper #18: Comparison of Treatment's Effectiveness Between Providence Braces and Boston Braces in Adolescent Idiopathic Scoliosis**
Julie Joncas, RN, BSc; Stefan Parent, MD, PhD; Marjolaine Roy-Beaudry, MSc; Mathieu Nault; Morris Duhaime, MD; Jean-Marc Mac-Thiong, MD, PhD; Hubert Labelle, MD
- 10:22 - 10:31 **Discussion**
- 10:32 - 10:36 **Paper #19: Risk Factors for Progression of Thoracolumbar/Lumbar Curve with Lumbar Modifier C and Low Back Pain in Non-Operated Patients with Adolescent Idiopathic Scoliosis: Mean 25-Year Follow-Up**
Masayuki Ohashi, MD, PhD; Kei Watanabe, MD, PhD; Toru Hirano, MD, PhD; Hirokazu Shoji, MD; Tatsuki Mizouchi, MD; Naoto Endo, MD
- 10:36 - 10:40 **Paper #20: Long-term Results of Compensatory Lumbar Curve in Non-operated Patients with Thoracic Adolescent Idiopathic Scoliosis**
Masayuki Ohashi, MD, PhD; Kei Watanabe, MD, PhD; Toru Hirano, MD, PhD; Hirokazu Shoji, MD; Tatsuki Mizouchi, MD; Naoto Endo, MD
- 10:40 - 10:44 **Paper #21: Long-term Back Pain in Patients with Adolescent and Juvenile Idiopathic Scoliosis: A Population-Based Cohort Study**
Aidin Kashigar; Katherine Lajkosz, MSc; Susan Brogly; Ana Johnson; Daniel P. Borschneck, MD, BSc, MSc, FRCSC
- 10:44 - 10:53 **Discussion**
- 10:54 - 10:58 **Paper #22: Biplanar Imaging Unlocks 3D Deformity in a 30-Year Follow-up Cohort of AIS Patients**
Chenghao Zhang, Dr.; Charles Gerald T. Ledonio, MD; David W. Polly, MD; Clayton T Cowl; Michael J. Yaszemski, MD, PhD; A. Noelle Larson, MD

SCIENTIFIC PROGRAM

THURSDAY, SEPTEMBER 7, 2017

10:58 - 11:02	Paper #23: Evaluating Healing Rates of Adolescent Pars Fractures Using Activity Restriction and Rigid Lumbar Brace <i>John W. McClellan, MD; Dorsey Ek, MS; Alec, P Lerner; Michaela Smith</i>
11:02 - 11:06	Paper #24: Surgical Treatment of Spondylolisthesis in Adolescents Has a 47% Re-operation Rate: A Multi-Center Retrospective Cohort Study <i>Ena Nielsen, BA; Lindsay M. Andras, MD; Nicole Michael, BA; Sumeet Garg, MD; Michael Paloski DO, MBA; Brian K. Brighton, MD; David L. Skaggs, MD, MMM</i>
11:06 - 11:15	Discussion
11:16 - 11:20	Paper #25: Guidelines for Surgical Reduction in High-Grade L5-S1 Spondylolisthesis Based on Quality of Life <i>Jean-Marc Mac-Thiong, MD, PhD; Michael T. Hresko, MD; Stefan Parent, MD, PhD; Daniel J. Sucato, MD, MS; Lawrence G. Lenke, MD; Michelle Claire Marks, PT, MA; Hubert Labelle, MD</i>
11:20 - 11:24	Paper #26: Clinical outcomes of surgically treated high-grade spondylolisthesis and their relation to Spinal Deformity Study Group (SDSG) classification <i>Daniel Bouton, MD; Daniel J. Sucato, MD, MS</i>
11:24 - 11:28	Paper #27: The Importance of Proximal Femoral Flexion on the Sagittal Balance and Quality of Life in High-Grade Spondylolisthesis <i>Jean-Marc Mac-Thiong, MD, PhD; Stefan Parent, MD, PhD; Julie Joncas, RN, BSc; Soraya Barchi; Hubert Labelle, MD</i>
11:28 - 11:37	Discussion
11:38-11:46	Introduction of the President <i>Todd J. Albert, MD – President Elect</i>
11:46-12:06	Presidential Address <i>Kenneth MC Cheung, MD</i>
12:06-12:35	Presentation of Lifetime Achievement Awards
12:35-13:30	Lunch
13:30-16:30	Half Day Courses (see page 21-23)

SCIENTIFIC PROGRAM

FRIDAY, SEPTEMBER 8, 2017

Session 3A: Hibbs Basic Research Award Nominees

07:55 - 08:43

Moderators: Charles Johnston, MD; Carol Hasler, MD

07:55 - 8:00

Welcome & Announcements

08:00 - 08:04

Paper #28: Analysis of the Associations of Polymorphism and Bone Mineral Density in Patients with Idiopathic Scoliosis

Miao Yu, MD

08:04 - 08:08

Paper #29: Intrinsic β -catenin Overexpression in Osteoblast Could Contribute to Impaired Osteocytogenesis in Adolescent Idiopathic Scoliosis (AIS)

Jiajun Zhang, MPhil; Yujia Wang; Huanxiong Chen, MD, PhD; Bobby Kinwah Ng, MD; Tsz-Ping Lam; Jack C.Y. Cheng, MD; Wayne YW Lee, PhD

08:08 - 08:12

Paper #30: Detection of Brain Abnormalities by in vivo MRI may serve as a Prognostic Test for Acquired Scoliosis in Proprioception-deficient Animal Model of AIS

Inbal Biton, PhD; Eran Assaraf; Yossi Smorgick; Yoram Anekstein; Elazar Zelzer, PhD; Ronen Blecher

08:12 - 08:21

Discussion

08:22 - 08:26

Paper #31: Propionibacterium Acnes survives only in the presence of implants and causes late infection

Yuta Shiono; Ken Ishii, MD; Kota Watanabe, MD, PhD; Morio Matsumoto, MD

08:26 - 08:30

Paper #32: Can MRSA Biofilm Infections Be Cleared from Pedicle Screws Intraoperatively?

Daniel G Meeker, BS; Karen Beenken, PhD; Weston, B Mills, BA; Richard E. McCarthy, MD; Mark S Smeltzer, PhD; David B. Bumpass, MD

08:30 - 08:34

Paper #33: Molecular characterization of intervertebral disc tissue by next generation RNA sequencing

Ahmad Nassr, MD; Scott Riester; Lin Cong; Mohamad Bydon, MD; A. Noelle Larson, MD

08:34 - 08:43

Discussion

Session 3B: Hibbs Clinical Research Award Nominees

08:43 - 09:48

Moderators: Kenneth MC Cheung, MD; Muharrem Yazici, MD

08:43 - 08:47

Paper #34: Dose-Response Relationship Of Tranexamic Acid In Adolescent Scoliosis Surgery.

Susan M. Goobie, MD, FRCPC; Michael T. Hresko, MD; Michael P. Glotzbecker, MD; Daniel J. Hedequist, MD; John B. Emans, MD; Lawrence I. Karlin, MD; Mary Ellen Mccann, MD, MPH; Robert, M Brustowicz, MD; Navil F. Sethna, MD; Andres Navedo, MD; Elisabeth Dwyer, BSN; Xiayi Huang; Luis Periera, PhD

08:47 - 08:51

Paper #35: Calcium and Vitamin D for Adolescent Idiopathic Scoliosis – A Further In-depth Review Using Finite Element Analysis (FEA) for a Randomized Double-blinded Placebo-controlled Trial

Tsz-Ping Lam; Benjamin Hon Kei Yip, PhD; Elisa M. S. Tam, PhD; Gene Chi Wai Man, PhD; Wayne YW Lee, PhD; Kwong Man Lee; Wai Ping Fiona Yu, MPH, BSc(Advanced); Yong Qiu, MD; Bobby Kinwah Ng, MD; Jack C.Y. Cheng, MD

08:51 - 08:55

Paper #36: Disc Degeneration at Distal Unfused Segments after posterior Spinal Fusion in Patients with Adolescent Idiopathic Scoliosis Lenke Type 1 or 2: A 20-Year Follow-up Study

Kazuki Kawakami, B.Kin; Ayato Nohara, MD; Toshiki Saito, MD; Ryoji Tauchi; Tesuya Ohara, MD; Noriaki Kawakami, MD, DMSc

08:55 - 09:04

Discussion

09:05 - 09:09

Paper #37: Minimally Invasive Lateral Lumbar Interbody Fusion for Adult Spinal Deformity: Clinical and Radiological Efficacy

Kee-Yong Ha; Jae-Won Lee; Sang-il Kim, MD; Young-Hoon Kim; Jin-Woo Lee; Hyung-Youl Park; Joo-Hyun Ahn

09:09 - 09:13

Paper #38: An Analysis of the Relative Incidence and Outcomes of Minor vs. Major Neurological Decline after Complex Adult Spinal Deformity Surgery: A Sub-analysis of Scolio-RISK-1 Study

So Kato, MD; Michael G. Fehlings, MD, PhD, FRCSC FACS; Stephen J. Lewis, MD, MSc, FRCSC; Lawrence G. Lenke, MD; Christopher I. Shaffrey, MD; Kenneth MC Cheung, MD; Leah Yacat Carreon, MD, MSc; Mark B. Dekutoski, MD; Frank J. Schwab, MD; Oheneba Boachie-Adjei, MD; Khaled Kebaish, MD; Christopher P. Ames, MD; Yong Qiu, MD; Yukihiko Matsuyama, MD, PhD; Benny T. Dahl, MD, PhD, DMSci; Hossein Mehdiian, MD, FRCS(Ed); Ferran Pellisé, MD, PhD; Sigurd H. Berven, MD

SCIENTIFIC PROGRAM

FRIDAY, SEPTEMBER 8, 2017

- 09:13 - 09:17 **Paper #39: Clinical Results and Surgery Tactics of Spinal Osteotomy for Ankylosing Spondylitis Kyphosis: Experience with 448 Patients**
Yan Wang, MD; Guoquan Zheng; Zheng Wang; XueSong Zhang, MD
- 09:17 - 09:26 **Discussion**
- 09:27 - 09:31 **Paper #40: Long-term Outcome of Untreated Scheuermann's Kyphosis**
Enrique Garrido, MD, EBOT, MRCS; Andrew David Duckworth, BSc, MBChB, MSc, FRCSEd(Tr&Orth), PhD; Joseph V J Fournier
- 09:31 - 09:35 **Paper #41: A Dedicated Pediatric Spine Deformity Team Significantly Reduces Surgical Time and Cost**
John M. Flynn, MD; Brendan Striano; Wallis, T Muhly, MD; Wudbhav N. Sankar, MD; Blair Kraus, RN, MSN, MBE; Vaidehi Mehta, MS, MPH; Michael Blum, RN, BSN, CNOR; Barbara DeZayas, MS, MSN, CRNA; Ron Keren, MD, MPH; Jeffrey Feldman, Dr.
- 09:35 - 09:39 **Paper #42: Development of a Risk Severity Score Predicting Surgical Site Infection in Early Onset Scoliosis**
Hiroko Matsumoto, MA; Anas A. Minkara, BHS; Nicholas Feinberg; John T. Smith, MD; Amer F. Samdani, MD; Michael P. Glotzbecker, MD; Jeffrey R. Sawyer, MD; David L. Skaggs, MD, MMM; David Price Royce, MD; Michael Vitale, MD, MPH; Growing Spine Study Group; Children's Spine Study Group
- 09:39 - 09:48 **Discussion**
- Session 4: Innovative Methods
10:08 - 11:45
Moderators: Gregory Mundis, MD; Stefan Parent, MD, PhD
- 10:08 - 10:12 **Paper #43: Anterior Spinal Growth Tethering Leads to Asymmetric Growth of the Apical Vertebra (Yang)**
Yi Yang; Peter O. Newton, MD; Megan Jeffords, MS; Tracey P. Bastrom; Carrie E. Bartley, MA; Fredrick Reighard; Burt Yaszay, MD
- 10:12 - 10:16 **Paper #44: Immediate Tridimensional Changes Following Anterior Vertebral Body Tethering in Adolescents with Idiopathic Scoliosis**
Olivier Turcor; Marjolaine Roy-Beaudry, MSc; Isabelle Turgeon, B.Sc.; Christian Bellefleur, MSc; Stefan Parent, MD, PhD
- 10:16 - 10:20 **Paper #45: Isolated Posterior Ligamentous Reinforcement does not Decrease Proximal Junctional Kyphosis in Adult Spinal Deformity**
Sravish Iyer, MD; Francis Lovecchio, MD; Jonathan Charles Elysée, BS; Renaud Lafage; Frank J. Schwab, MD; Virginie LaFage, PhD; Han Jo Kim, MD
- 10:20 - 10:29 **Discussion**
- 10:30 - 10:34 **Paper #46: Two Birds, One Stone: A Change in Hand Positioning for Low Dose Stereoradiography AIS Imaging Allows Concurrent, Reliable Sander's Scoring**
Taylor Jackson; Daniel J Miller, MD; Susan Nelson, MD, MPH; Patrick J. Cahill, MD; John M. Flynn, MD
- 10:34 - 10:38 **Paper #47: 3D Printing Innovation in the Surgical Management of Adolescent Idiopathic Scoliosis Patients**
Alpaslan Senkoylu, MD; Mehmet Cetinkaya, Dr.; Ali Eren, MD; Ismail Daldal, Dr.; Erdem Aktas; Dino Samartzis, DSc
- 10:38 - 10:42 **Paper #48: Patient Specific Navigation Yields Accurate Pedicle Screw Placement across Surgeons of Varying Experience**
Kyle Walker; Joel Kolmodin; Michael, P Silverstein, PGY-5; Eric, J Rodriguez, BS; Brandon L. Raudenbush, DO; David P. Gurd, MD
- 10:42 - 10:51 **Discussion**
- 10:52 - 10:56 **Paper #49: Development of a software estimates spinal alignment utilizing artificial intelligence for scoliosis screening**
Kota Watanabe, MD, PhD; Ran Choi; Nobuyuki Fujita, MD, PhD; Yoji Ogura; Satoru Demura, MD; Toshiaki Kotani, MD, PhD; Kanichiro Wada; Masashi Miyazaki, Dr.; Hideki Shigematsu, MD; Yoshimitsu Aoki, Prof.; Morio Matsumoto, MD
- 10:56 - 11:00 **Paper #50: Temporary Magnetic Controlled Growing Rods (MCGR) for the Treatment of Severe Scoliosis Provides Maximum Curve Correction and Spinal Height Restoration: A 6 Years Experience from First to Latest Case**
Heiko Koller; Axel Hempfing; Aiman Tateen, MD; Michael Mayer

SCIENTIFIC PROGRAM

FRIDAY, SEPTEMBER 8, 2017

11:00 - 11:04	Paper #51: Posterolateral Diskectomies for Pediatric Spinal Deformities: Indications, Outcomes, and Comparison with Anteroposterior Spinal Arthrodesis <i>Amit Jain, MD; Brian T. Sullivan, BS; Hamid Hassanzadeh, MD; Paul D. Sponseller, MD, MBA</i>
11:04 - 11:13	Discussion
11:14 - 11:17	2017 IMAST Preview
11:17 - 11:20	2018 Annual Meeting Preview
11:20 - 11:23	Worldwide Conferences Preview
11:23 - 11:28	Harrington Lecture Introduction
11:28 - 11:48	Harrington Lecture
11:48 - 12:05	Break
12:05 - 13:05	Lunchtime Symposia (see page 19)
13:05 - 13:15	Break

Session 5: Early Onset Scoliosis (Runs Concurrently with Session 6)

13:15 - 15:04

Moderators: Laurel C. Blakemore, MD; John A I Ferguson, FRACS

13:15 - 13:19	Paper #52: Building the Case for Optimal Prophylaxis for Growth-Friendly Surgery for Non-idiopathic Scoliosis: Using Vancomycin and Aminoglycosides <i>Anas A. Minkara, BHS; Michael Vitale, MD, MPH; Hiroko Matsumoto, MA; Michael P. Glotzbecker, MD; John M. Flynn, MD; John T. Smith, MD; Amer F. Samdani, MD; Lisa Saiman; Children's Spine Study Group</i>
13:19 - 13:23	Paper #53: Deep Surgical Site Infections (SSIs) Following Growth-Friendly Procedures in Children with Non-idiopathic Scoliosis Requiring Repetitive Surgery: Per Patient Risk 6-Fold Higher than Per Procedure Risk <i>Anas A. Minkara, BHS; Michael Vitale, MD, MPH; Hiroko Matsumoto, MA; Michael P. Glotzbecker, MD; John M. Flynn, MD; John T. Smith, MD; Amer F. Samdani, MD; Lisa Saiman; Children's Spine Study Group</i>
13:23 - 13:27	Paper #54: Analysis of Explanted Magnetically Controlled Growing Rods from 7 UK Spinal Centers <i>Thomas J Joyce; Simon L Smith; Paul RP Rushton; Andrew J Bowey; Michael J Gibson</i>
13:27 - 13:36	Discussion
13:37 - 13:41	Paper #55: Continued deterioration in pulmonary function at minimum 18-year follow-up from early thoracic fusion in non-neuromuscular scoliosis <i>Daniel Bouton, MD; Lori Ann Karol, MD; Kiley Poppino, BS; Charles E. Johnston, MD</i>
13:41 - 13:45	Paper #56: Improvement of Pulmonary Function Measured by Patient-Reported Outcomes in Patients with Spinal Muscular Atrophy after Growth-Friendly Instrumentation <i>Hiroko Matsumoto, MA; John David Mueller, BS; Anas A. Minkara, BHS; Patrick J. Cahill, MD; Peter F. Sturm, MD; John T. Smith, MD; George H. Thompson, MD; Paul D. Sponseller, MD, MBA; David L. Skaggs, MD, MMM; Michael Vitale, MD, MPH; David Price Royce, MD; Growing Spine Study Group; Children's Spine Study Group</i>
13:45 - 13:49	Paper #57: MRI in Early Onset Scoliosis: Is Universal Screening Necessary? <i>Scott Herron; Anthony Kouri; Elizabeth W Hubbard, MD; Vishwas R. Talwalkar, MD; Ryan D. Muchow, MD; Henry J. Iwinski, MD; Cale Jacobs, PhD</i>
13:49 - 13:58	Discussion
13:59 - 14:03	Paper #58: All that Glitters is Not Gold – Serial Casting for EOS Negatively Affects Health-Related Quality of Life even after Discontinuation of Serial Casting: A 2 Year Follow-up <i>Hiroko Matsumoto, MA; Emily Auran, BA; Chun Wai Hung, MEng; Peter F. Sturm, MD; Sumeet Garg, MD; James O. Sanders, MD; Matthew E. Oetgen, MD; David Price Royce, MD; Michael Vitale, MD, MPH; Children's Spine Study Group; Growing Spine Study Group</i>
14:03 - 14:07	Paper #59: Results of Casting in Severe Infantile Scoliosis <i>Peter J. Stasikelis, MD; Ashley Carpenter</i>

SCIENTIFIC PROGRAM

FRIDAY, SEPTEMBER 8, 2017

- 14:07 - 14:11 **Paper #60: Does Decompression of Chiari I Malformations Alter the Progression of Early-onset Scoliosis (EOS) -The Importance of Associated Syringomyelia?**
Eric A. Davis; Amanda T. Whitaker; Michael J. Troy, BS; Michael T. Hresko, MD; John B. Emans, MD; Daniel J. Hedequist, MD; Mark Proctor, Dr.; Brian D. Snyder, MD, PhD; Michael P. Glotzbecker, MD
- 14:11 - 14:20 **Discussion**
- 14:21 - 14:25 **Paper #61: Pelvic Obliquity Correction in Distraction-Based Growth Friendly Implants**
Mathew D Schur, BA; Lindsay M. Andras, MD; Nicholas, R Gonsalves, MD; Paul D. Sponseller, MD, MBA; John B. Emans, MD; Michael Vitale, MD, MPH; David L. Skaggs, MD, MMM; Children's Spine Study Group; Growing Spine Study Group
- 14:25 - 14:29 **Paper #62: Hemoglobin Levels Pre- and Post-Treatment as a Surrogate for Disease Severity in Early Onset Scoliosis**
Michael P. Glotzbecker, MD; Alexandra Grzywna, BA; Patricia E. Miller, MS; Michael Vitale, MD, MPH; Jeffrey R. Sawyer, MD; Joshua M. Pahys, MD; Patrick J. Cahill, MD; John B. Emans, MD; Children's Spine Study Group
- 14:29 - 14:33 **Paper #63: Congenital Spine Deformity with Fused Ribs Treated with Proximal Rib- vs. Spine-Based Growing Constructs**
A. Noelle Larson, MD; Tricia St. Hilaire, MPH; Jeff Pawelek; David L. Skaggs, MD, MMM; John B. Emans, MD; Joshua M. Pahys, MD; Children's Spine Study Group; Growing Spine Study Group
- 14:33 - 14:42 **Discussion**
- 14:43 - 14:47 **Paper #64: Self Sliding Growth Guidance Technique with Multisegmenter Pedicle Screw Fixation in the Treatment of EOS**
Sinan Kabraman, MD; Cem Sever, MD; Selhan Karadereler, MD; Emel Kaya, MD; Isik Karalok, MD; Tunay Sanli, MA; Meric Enercan, MD; Azmi Hamzaoglu, MD
- 14:47 - 14:51 **Paper #65: Growth Guidance - Evolution of a New Procedure: Rate of Complications in the First Two Years Following Implantation in the First 80 Patients**
Richard E. McCarthy, MD; Frances McCullough, MNsc; David B. Bumpass, MD
- 14:51 - 14:55 **Paper #66: Construct Levels to Anchored Levels Ratio and Rod Diameter are Associated with Implant-Related Complications in Traditional Growing Rods**
Pooria Hosseini, MD; Behrooz A. Akbarnia, MD; Stacie Nguyen, MPH; Jeff Pawelek; John B. Emans, MD; Peter F. Sturm, MD; Paul D. Sponseller, MD, MBA; Growing Spine Study Group
- Session 6: Etiology/Genetics, Diagnosis, Miscellaneous, & Cervical Deformity, (Runs Concurrently with Session 5)
- 13:15 - 15:04
Moderators: Andre Luis Fernandes Andujar, MD; Serena S. Hu, MD
- 13:15 - 13:19 **Paper #67: GWAS-associated Single Nucleotide Polymorphisms are associated with Curve Progression in Adolescent Idiopathic Scoliosis?**
Gene Chi Wai Man, PhD; Nelson Leung Sang Tang, Dr; Ting Fung Chan, Dr.; Bobby Kinwah Ng, MD; Lei-lei Xu, MD; Tsz-Ping Lam; ZeZhang Zhu, MD PhD; Yong Qiu, MD; Jack C.Y. Cheng, MD
- 13:19 - 13:23 **Paper #68: A genetic predictive model estimating the risk of developing AIS**
Lei-lei Xu, MD; Xiao-dong Qin, PhD; Weixiang Sun, MD; Weiguo Zhu, MD, PhD; ZeZhang Zhu, MD PhD; Jack C.Y. Cheng, MD; Tsz-Ping Lam; Yong Qiu, MD
- 13:23 - 13:27 **Paper #69: Correlation of the Sanders Skeletal Maturity Stage with Risser Stage in Adolescents with Idiopathic Scoliosis**
Kushagra Verma, MD, MS; Peter G. Gabos, MD; James O. Sanders, MD; Kenneth J. Rogers, PhD, ATC; Suken A. Shah, MD
- 13:27 - 13:36 **Discussion**
- 13:37 - 13:41 **Paper #70: Supine Radiographs are superior to standing radiographs in predicting surgical correction in Adult Spinal Deformity**
Jeffrey J Varghese, BS; Tejbir Pannu; Jonathan Charles Elysée, BS; Sebastien Pesenti; Renaud Lafage; Virginie LaFage, PhD; Han Jo Kim, MD
- 13:41 - 13:45 **Paper #71: Ultrasound Imaging Can Reduce Traditional Radiology in the Follow-up of Children with AIS**
Edmond H. Lou, PhD, PEng; Rui zheng, PhD; Douglas Leon Hill, MBA; V. James Raso, MASc; Douglas M. Hedden, MD; Marc J. Moreau, MD

SCIENTIFIC PROGRAM

FRIDAY, SEPTEMBER 8, 2017

- 13:45 - 13:49 **Paper #72: A Consistent Intraoperative Neuromonitoring Team Decreases the Number of Alerts, Stagnara Wake-up Tests, and Aborted Cases**
Amer F. Samdani, MD; David S. Casper; Joshua M. Pahys, MD; Maria Zuccaro, CNIM; James Zuccaro, DABNM; Steven W. Hwang, MD
- 13:49 - 13:58 **Discussion**
- 13:59 - 14:03 **Paper #73: A preliminary study of spinal cord blood flow during posterior vertebral column resection in severe rigid scoliotyphosis patients**
Tao Li, MD; Jingming Xie, MD; Ni Bi, MD; Yingsong Wang, MD; Ying Zhang, MD; Jie Zhang, MD; Zhiyue Shi, MD; Zhi Zhao, MD
- 14:03 - 14:07 **Paper #74: Severe Hyperkyphosis Harms Aerobic Capacity and Maximal Exercise Tolerance in Patients with Scheuermann Disease**
Alejandro Lorente, PhD; Carlos Barrios, MD; Jesus Burgos Flores, MD, PhD; Rafael Lorente, PhD
- 14:07 - 14:11 **Paper #75: Does Preserving or Restoring Lumbar Lordosis Influence the Functional Outcome in Lumbosacral Tuberculous Spondylodiscitis?**
Ajoy Prasad Shetty, MS Orth; S. Rajasekaran, MD DNB FRCS MCh PhD; Aju Bosco, MS, FNB
- 14:11 - 14:20 **Discussion**
- 14:21 - 14:25 **Paper #76: Is there an Anatomic Predisposition to Postoperative Total Hip Arthroplasty Dislocation in Patients with Prior Lumbar Fusion?**
Philip J. York; Christopher Chen; Michael Reiter, PGY3; Craig Hogan; Michael Dayton; Evalina Burger, MD; Christopher J. Kleck, MD
- 14:25 - 14:29 **Paper #77: Total Hip Arthroplasty in the Spinal Deformity Population: Does Degree of Deformity Affect Hip Stability?**
Edward M. DelSole; Ran Schwarzkopf, MD; Jonathan Vigdorchik, MD; Thomas J. Errico, MD; Aaron J. Buckland, MBBS, FRACS
- 14:29 - 14:33 **Paper #78: The Ecuador Pediatric Spine Deformity Surgery Program Development and Outcomes, 2008-2014**
Amanda Fletcher; Richard M. Schwend, MD
- 14:33 - 14:42 **Discussion**
- 14:43 - 14:47 **Paper #79: Neurological Complications and Recovery Rates in Adult Cervical Deformity Surgery**
Han Jo Kim, MD; Hongda Bao, MD, PhD; Christopher I. Shaffrey, MD; Justin S. Smith, MD, PhD; Michael P Kelly, MD; Munish C Gupta, MD; Todd J. Albert, MD; Themistocles S. Protopsaltis, MD; Gregory M. Mundis, MD; Peter G. Passias, MD; Eric O. Klineberg, MD; Virginie LaFage, PhD; Christopher P. Ames, MD; International Spine Study Group
- 14:47 - 14:51 **Paper #80: Prospective Multicenter Assessment of All-Cause Mortality Following Surgery for Adult Cervical Deformity (ACD)**
Justin S. Smith, MD, PhD; Christopher I. Shaffrey, MD; Han Jo Kim, MD; Peter G. Passias, MD; Themistocles S. Protopsaltis, MD; Renaud Lafage; Gregory M. Mundis, MD; Eric O. Klineberg, MD; Virginie LaFage, PhD; Frank J. Schwab, MD; Justin K. Scheer; Michael P Kelly, MD; D. Kojo Hamilton, MD, FAANS; Munish C Gupta, MD; Vedat Deviren, MD; Richard Hostin, MD; Todd J. Albert, MD; K. Daniel Riew, MD; Robert A. Hart, MD; Douglas C. Burton, MD; Shay Bess, MD; Christopher P. Ames, MD; International Spine Study Group
- 14:51 - 14:55 **Paper #81: Establishing the Minimum Clinically Important Difference in NDI and mJOA for Adult Cervical Deformity**
Alex Soroceanu, MD, MPH; Jeffrey L. Gum, MD; Michael P Kelly, MD; Peter G. Passias, MD; Justin S. Smith, MD, PhD; Themistocles S. Protopsaltis, MD; Virginie LaFage, PhD; Han Jo Kim, MD; Justin K. Scheer; Munish C Gupta, MD; Gregory M. Mundis, MD; Eric O. Klineberg, MD; Douglas C. Burton, MD; Shay Bess, MD; Christopher P. Ames, MD; International Spine Study Group
- 14:55 - 15:04 **Discussion**

SCIENTIFIC PROGRAM

FRIDAY, SEPTEMBER 8, 2017

Session 7: Congenital & Neuromuscular

15:25 - 17:14

Moderators: Noriaki Kawakami, MD, DMSc; Paul D. Sponseller, MD

15:25 - 15:29

Paper #82: Surgical Correction of the Rigid Sharp Angular Kyphotic Deformity with Gradual Sequential Posterior Compression and Simultaneous Anterior Column Lengthening Technique After PVCR

Selhan Karadereler, MD; Sinan Kahraman, MD; Cem Sever, MD; Emel Kaya, MD; Ayhan Mutlu, Radiologist; Tunay Sanli, MA; Meric Enercan, MD; Azmi Hamzaoglu, MD

15:29 - 15:33

Paper #83: SRS-Schwab Grade 4 Osteotomy for Angular Congenital Kyphosis: A Minimum 2-Year Follow-Up Study

ZeZhang Zhu, MD PhD; Xu Sun, MD, PhD; Qinghua Zhao, MD; Shifu Sha, MD, PhD; Bangping Qian, MD; Bin Wang, MD; Yang Yu, MD; Yong Qiu, MD

15:33 - 15:37

Paper #84: Cluster Analysis Describes Constellations of Cardiac Anomalies Presenting in Spinal Anomaly Patients

Peter G. Passias, MD; Gregory W Poorman, BA; Dennis Vasquez-Montes, MS; Charles Wang, BS; John Moon, BS; Peter L Zhou, BA; Samantha R. Horn, BA; Bassel G. Diebo, MD; Shaleen Vira, MD

15:37 - 15:46

Discussion

15:47 - 15:51

Paper #85: Is It Possible to Correct Congenital Spinal Deformity Associated with Tethered Cord without Detethering?

Hui-Ren Tao, MD, PhD; Michael S. Chang, MD; Bo-bo Zhang, MD

15:51 - 15:55

Paper #86: Does untreated intraspinal anomalies in congenital scoliosis impact the safety and efficiency of corrective surgery for scoliosis?A prospective case-control study

Qinghua Zhao, MD; Xu Sun, MD, PhD; Shifu Sha, MD, PhD; Yong Qiu, MD; ZeZhang Zhu, MD PhD

15:55 - 15:59

Paper #87: Thoracic Cage Deformities Affected Cardiopulmonary Function in Patients with Congenital Scoliosis

Youxu Lin, MD; Xingye Li, MD; Wangshu Yuan, Dr.; Hui Cong, MD; Haining Tan; Jianxiong Shen, MD

15:59 - 16:08

Discussion

16:09 - 16:13

Paper #88: Maternal Risk Factors for Congenital Spinal Deformity Diagnosed in Infancy

Hillard T. Spencer, MD; Ming-Sum Lee, MD PhD

16:13 - 16:17

Paper #89: Risk of Surgical Treatment for Idiopathic-like Scoliosis Associated with Chiari 1 Malformation Following Decompression

Dong-Phuong Tran, MS; Charles E. Johnston, MD; Kaitlyn, E. Brown, MS; John A Herring, MD

16:17 - 16:21

Paper #90: Progression of Scoliosis in Children who Sustained Spinal Cord Injuries at 5 years of Age and Younger

Jennifer Schottler, MPT; Purnendu Gupta, MD; Kim W. Hammerberg, MD; Erin H. Kelly, PhD; Lawrence C Vogel

16:21 - 16:30

Discussion

16:31 - 16:35

Paper #91: Improving Health Related Quality of Life in Patients with Non-Ambulatory Cerebral Palsy: Who Stands to Gain from Scoliosis Surgery?

Patrick J. Cahill, MD; Daniel J Miller, MD; John M. Flynn, MD; Saba Pasha; Burt Yaszay, MD; Stefan Parent, MD, PhD; Jahangir K. Asghar, MD; Mark F. Abel, MD; Joshua M. Pahys, MD ;Harms Study Group; Paul D. Sponseller, MD, MBA

16:35 - 16:39

Paper #92: Pelvic Fixation in Cerebral Palsy Scoliosis: Differences Evident at 5 Year Follow Up

Oussama Abousamra, MD; Paul D. Sponseller, MD, MBA; Amer F. Samdani, MD; Burt Yaszay, MD; Patrick J. Cahill, MD; Peter O. Newton, MD

16:39 - 16:43

Paper #93: Relative Valuation of Interventions for Severe Cerebral Palsy: Spinal Correction Ranked the Most Beneficial, but Below G-tube

Amit Jain, MD; Paul D. Sponseller, MD, MBA; Brian T. Sullivan, BS; Suken A. Shah, MD; Amer F. Samdani, MD; Burt Yaszay, MD; Unni G. Narayanan, MBBS, MSc, FRCS(C); Peter O. Newton, MD; Michelle Claire Marks, PT, MA; Harms Study Group

16:43 - 16:52

Discussion

SCIENTIFIC PROGRAM

FRIDAY, SEPTEMBER 8, 2017

- 16:53 - 16:57 **Paper #94: Don't You Wish You Had Fused to the Pelvis the First Time: A Comparison of Reoperation Rate and Correction of Pelvic Obliquity**
Ena Nielsen, BA; Lindsay M. Andras, MD; Laura L. Bellaire, MD; Nicholas D. Fletcher, MD; Anas A. Minkara, BHS; Michael Vitale, MD, MPH; Michael J. Troy, BS; Michael P. Glotzbecker, MD; David L. Skaggs, MD, MMM
- 16:57 - 17:01 **Paper #95: Pulmonary function and Survival Outcomes in Duchenne Muscular Dystrophy Scoliosis (Comparison of the Differences Between Surgical and Nonsurgical Treatment)**
Hak-Sun Kim, MD; Joong Won Ha, MD; Hyon-Su Chong, MD; Jae-Ho Yang, MD; Dong-Wook Kim, MD; Seungjin Choi, MD
- 17:01 - 17:05 **Paper #96: Incidence and Description of Scoliotic Curves in Friedreich Ataxia Patients at Skeletal Maturity**
Jean Meyblum; Christophe J. Vidal, MD; Brice Ilharreborde, MD, PhD
- 17:05 - 17:14 **Discussion**

SATURDAY, SEPTEMBER 9, 2017

Session 8: Complications

07:55 - 09:05

Moderators: Ferran Pellisé, MD, PhD; Justin S. Smith, MD, PhD

- 08:00 - 08:04 **Paper #97: Implementing a Multidisciplinary Clinical Pathway Can Reduce the Deep Surgical Site Infection Rate After Posterior Spinal Fusion In High Risk Patients**
Michael J. Troy, BS; Michael P. Glotzbecker, MD; Patricia E. Miller, MS; Michael T. Hresko, MD; Brian D. Snyder, MD, PhD; Lawrence I. Karlin, MD; Mary Ellen Mccann, MD, MPH; Susan M. Goobie, MD, FRCPC; Robert, M Brustowicz, MD; Andres Navedo, MD; Daniel J. Hedequist, MD
- 08:04 - 08:08 **Paper #98: Postoperative Surgical Site Infection after Spine Surgery: An Update from the Scoliosis Research Society (SRS) Morbidity and Mortality Database**
Jamal Shillingford, MD; Joseph Lawrence Laratta, MD; Alex Ha, MD; Comron Saifi, MD; Ronald A. Lehman, MD; Lawrence G. Lenke, MD; Charla R. Fischer, MD
- 08:08 - 08:12 **Paper #99: Topical Vancomycin Increased the Rate of Superficial Infection Without Impacting Deep Infection**
Kelly Harms, BA; Benjamin Hooe, MD; Megan Mignemi, MD; Gregory A. Mencia, MD; Jeffrey E. Martus, MD, MS
- 08:12 - 08:21 **Discussion**
- 08:22 - 08:26 **Paper #100: Vertebral column resection for the treatment of adult spinal deformities: Outcomes and complications with minimum 2 year follow up**
Mostafa H. El Dafrawy, MD; Micheal Raad, MD; Moustafa Abou Areda, BA; Khaled Kebaish, MD
- 08:26 - 08:30 **Paper #101: Perioperative Complications after Vertebral Column Resection (VCR) for Severe Pediatric Spinal Deformity**
Lawrence G. Lenke, MD; Munish C Gupta, MD; Brenda Sides, MA; Paul D. Sponseller, MD, MBA; Daniel J. Sucato, MD, MS; Suken A. Shah, MD; Amer F. Samdani, MD; Burt Yaszay, MD; Sumeet Garg, MD; Oheneba Boachie-Adjei, MD; Michael P Kelly, MD
- 08:30 - 08:34 **Paper #102: Single Stage Multi-Level PVCR for Severe & Rigid Adult Spinal Deformity Associated with Neurologic Deficit: Clinical, Radiological Results and Complications**
Cem Sever, MD; Selhan Karadereler, MD; Gokce Feride Inan, MD; Emel Kaya, MD; Sezgi Burcin Barlas; Ayhan Mutlu; Yesim Erol, BSc; Tunay Sanli, MA; Sinan Kahraman, MD; Meric Enercan, MD; Azmi Hamzaoglu, MD
- 08:34 - 08:42 **Discussion**
- 08:43 - 08:47 **Paper #103: Postoperative Radiological Predictors for Proximal Junctional Kyphosis: Comparison of Four Radiological Predictive Models**
Amer Sebaaly; Guillaume Riouallon; Ibrahim Obeid, MD; Maroun Rizkallah, MD; Féthi Laouissat, MD; Yann-Philippe Charles; Pierre Roussouly, MD
- 08:47 - 08:51 **Paper #104: The Role of Posterior Ligamentous Tension Band in Proximal Junctional Kyphosis**
Samuel K. Cho, MD; Jun S Kim, MD; John M. Caridi, MD

SCIENTIFIC PROGRAM

SATURDAY, SEPTEMBER 9, 2017

- 08:51 - 08:55 **Paper #105: Recurrent Proximal Junctional Kyphosis: Incidence, Risk Factors, Revision Rates and Outcomes at 2 Year Minimum Follow Up**
Han Jo Kim, MD; Shan-Jin Wang, MD; Okezie K. Aguwa, MD; Renaud Lafage; Christopher I. Shaffrey, MD; Gregory M. Mundis, MD; Richard Hostin, MD; Douglas C. Burton, MD; Christopher P. Ames, MD; Eric O. Klineberg, MD; Munish C Gupta, MD; Justin S. Smith, MD, PhD; Frank J. Schwab, MD; Virginie LaFage, PhD; International Spine Study Group
- 08:55 - 09:05 **Discussion**
- Session 8: Complications
- 09:05 - 10:20
Moderators: Ilkka Helenius, MD, PhD; David Polly, MD
- 09:06 - 09:10 **Paper #106: Incidence and Risk Factors of Post-operative Neurological Decline after Complex Adult Spinal Deformity Surgery: Results of the Scolio-RISK-1 Study**
So Kato, MD; Michael G. Fehlings, MD, PhD, FRCSC FACS; Stephen J. Lewis, MD, MSc, FRCSC; Lawrence G. Lenke, MD; Christopher I. Shaffrey, MD; Kenneth MC Cheung, MD; Leah Yacat Carreon, MD, MSc; Mark B. Dekutoski, MD; Frank J. Schwab, MD; Oheneba Boachie-Adjei, MD; Khaled Kebaish, MD; Christopher P. Ames, MD; Yong Qiu, MD; Yukihiro Matsuyama, MD, PhD; Benny T. Dahl, MD, PhD, DMSci; Ferran Pellisé, MD, PhD; Sigurd H. Berven, MD; Nicole M. Gernscheid, MSc
- 09:10 - 09:14 **Paper #107: Unilateral vs. Bilateral Lower Extremity Motor Deficit Following Complex Adult Spinal Deformity Surgery: Is there a Difference in Recovery Up to 2 Year F/U?**
Alexander Tuchman, MD; Lawrence G. Lenke, MD; Michael G. Fehlings, MD, PhD, FRCSC FACS; Stephen J. Lewis, MD, MSc, FRCSC; Christopher I. Shaffrey, MD; Kenneth MC Cheung, MD; Leah Yacat Carreon, MD, MSc; Mark B. Dekutoski, MD; Frank J. Schwab, MD; Oheneba Boachie-Adjei, MD; Khaled Kebaish, MD; Christopher P. Ames, MD; Yong Qiu, MD; Yukihiro Matsuyama, MD, PhD; Benny T. Dahl, MD, PhD, DMSci; Hossein Mehdian, MD, FRCS(Ed); Ferran Pellisé, MD, PhD; Sigurd H. Berven, MD
- 09:14 - 09:18 **Paper #108: Visual Loss Following Spine Surgery: What Have We Seen Within the Scoliosis Research Society (SRS) Morbidity and Mortality Database?**
Jamal Shillingford, MD; Joseph Lawrence Laratta, MD; Nana Sarpong; Ronald A. Lehman, MD; Lawrence G. Lenke, MD; Charla R. Fischer, MD
- 09:18 - 09:27 **Discussion**
- 09:28 - 09:32 **Paper #109: Impact of Resolved Early Major Complications on Two-Year Follow-Up Outcome Following Adult Spinal Deformity Surgery**
Susana Núñez Pereira, MD, PhD; Alba Vila-Casademunt, MSc; Montse Domingo-Sàbat, PhD; Sleiman Haddad; Emre R. Acaroglu, MD; Ahmet Alanay, MD; Frank S. Kleinstueck, MD; Ibrahim Obeid, MD; Francisco Javier Sanchez Perez-Grueso, MD; Ferran Pellisé, MD, PhD; European Spine Study Group
- 09:32 - 09:36 **Paper #110: Impact of Adverse Events on the Readmission Rate, Revision Surgery and Mortality 2 years after Complex Spine Surgery - a SAVES Follow-Up Study**
Sven Karstensen, MD; Mathias Dahl Sorensen; Tanvir Bari, MD; Martin Gehrchen, MD, PhD; John T. Street, MD PhD; Benny T. Dahl, MD, PhD, DMSci
- 09:36 - 09:40 **Paper #111: Utilizing the Fracture Risk Assessment Tool (FRAX) to Assess Risk of Proximal Junctional Kyphosis in Adult Spinal Deformity Surgery**
Brian C Goh, BS; Akachimere C Uzosike, BA; Robert J Tamai, BA; Mostafa H. El Dafrawy, MD; Amit Jain, MD; Daniel M. Sciubba, MD; Richard Skolasky, ScD; Khaled Kebaish, MD; Brian J. Neuman, MD
- 09:40 - 09:49 **Discussion**
- 09:50 - 09:54 **Paper #112: Pulmonary Cement Embolism Following Cement Augmented Fenestrated Pedicle Screw Fixation in Adult Spinal Deformity Patients with Severe Osteoporosis (Analysis of 2978 fenestrated screws)**
Isik Karalok, MD; Emel Kaya, MD; Onur Levent Ulusoy; Gokce Feride Inan, MD; Cem Sever, MD; Yesim Erol, BSc; Tunay Sanli, MA; Sinan Kahraman, MD; Selhan Karadereler, MD; Meric Enercan, MD; Azmi Hamzaoglu, MD

SCIENTIFIC PROGRAM

SATURDAY, SEPTEMBER 9, 2017

- 09:54 - 09:58 **Paper #113: Topical Vancomycin in Pediatric Spine Surgery Does Not Reduce Surgical Site Infection: A Retrospective Cohort Study**
Sumet Garg, MD; Nikki Bloch, BA; Morgan Potter, BA; Claire Palmer, MS; Nicole Michael, BA; Courtney O'Donnell, MD; Mark A. Erickson, MD
- 09:58 - 10:02 **Paper #114: The significance of clunking in magnetically controlled growing rod distractions: a prospective analysis of 22 patients**
Jason Pui Yin Cheung, MBBS (HK); Karen Kar-lum Yiu, MS; Dino Samartzis, DSc; Kenny Kwan, BMBCh(Oxon), FRCSEd; Kenneth MC Cheung, MD
- 10:04 - 10:08 **Paper #115: National trends and in-hospital outcomes of patients with solid organ transplant undergoing spinal fusion**
Hiroyuki Yoshihara; Carl B. Paulino, MD; Daisuke Yoneoka
- 10:08 - 10:20 **Discussion**

Session 9: Adult Deformity

11:00 - 12:49

Moderators: Todd J. Albert, MD; Ahmet Alanay, MD

- 11:00 - 11:04 **Paper #115: Sagittal Realignment Goals Should Be Set to Ideal Proportionate Shape and Alignment Independent of Age**
Caglar Yilgor, MD; Nuray Sogunmez, MSc; Yasemin Yavuz, PhD; Ibrahim Obeid, MD; Frank S. Kleinstueck, MD; Emre R. Acaroglu, MD; Francisco Javier Sanchez Perez-Grueso, MD; Anne F. Mannion, PhD; Ferran Pellisé, MD, PhD; Ahmet Alanay, MD; European Spine Study Group
- 11:04 - 11:08 **Paper #116: Global Sagittal Angle (GSA) Defines the Fan of Full Body Alignment**
Bassel G. Diebo, MD; Gregory W Poorman, BA; Samantha R. Horn, BA; Peter L Zhou, BA; Frank A. Segreto, BS; Peter G. Passias, MD
- 11:08 - 11:12 **Paper #117: Description of the Sagittal Alignment of the Degenerative Human Spine According to Rous-souly's Classification**
Amer Sebaaly; Pierre Grobost; Lisa Mallam; Pierre Roussouly, MD
- 11:12 - 11:21 **Discussion**
- 11:22 - 11:26 **Paper #118: Minimum Detectable Change (MDC) and Minimum Clinically Important Difference (MCID) of Health Related Quality of Life Parameters in Adult Spinal Deformity**
Selcen Yuksel, PhD; Selim Ayhan, MD; Montse Domingo-Sabat, PhD; Ibrahim Obeid, MD; Francisco Javier Sanchez Perez-Grueso, MD; Frank S. Kleinstueck, MD; Ferran Pellisé, MD, PhD; Ahmet Alanay, MD; Emre R. Acaroglu, MD; European Spine Study Group
- 11:26 - 11:30 **Paper #119: How Much Will I Improve After My Surgery and Will I Be Normal? The Critical Importance of Collecting and Discussing Patient Reported Outcomes Measures (PROMS) With Adult Spinal Deformity (ASD) Patients**
Shay Bess, MD; Breton G. Line, BSME; Christopher P. Ames, MD; Douglas C. Burton, MD; Virginie LaFage, PhD; Renaud Lafage; Robert A. Hart, MD; Michael P Kelly, MD; Han Jo Kim, MD; Eric O. Klineberg, MD; Richard Hostin, MD; Gregory M. Mundis, MD; Munish C Gupta, MD; Khaled Kebaish, MD; Frank J. Schwab, MD; Christopher I. Shaffrey, MD; Justin S. Smith, MD, PhD; International Spine Study Group
- 11:30 - 11:34 **Paper #120: Cost-effectiveness of Operative vs Nonoperative treatment of Adult Symptomatic Lumbar Scoliosis**
Leah Yacat Carreon, MD, MSc; Keith H. Bridwell, MD; Michael P Kelly, MD; Christine R. Baldus, RN, MHS; Kelly R. Bratcher, RN, CCRP; Charles H. Crawford, MD; Elizabeth L. Yanik, PhD; Steven D. Glassman, MD
- 11:34 - 11:43 **Discussion**
- 11:44 - 11:48 **Paper #121: Preoperative Osteoporosis Treatment in Patients with Lumbar Scoliosis**
Natalia Morozova, MD; Sergey Kolesov, MD, PhD
- 11:48 - 11:52 **Paper #122: Cost Effectiveness of rhBMP-2 Use in Adult Spinal Surgery**
Amit Jain, MD; Samrat Yeramaneeni, MBBS, MS, PhD; Jeffrey L. Gum, MD; Michael P Kelly, MD; Khaled Kebaish, MD; Douglas C. Burton, MD; Christopher P. Ames, MD; Christopher I. Shaffrey, MD; Justin S. Smith, MD, PhD; Hamid Hassanzadeh, MD; Steven D. Glassman, MD; Leah Yacat Carreon, MD, MSc; Shay Bess, MD; Richard Hostin, MD; International Spine Study Group

SCIENTIFIC PROGRAM

SATURDAY, SEPTEMBER 9, 2017

11:52 - 11:56	<p>Paper #123: Association of degenerative lumbar scoliosis with the genetic factors in adolescent idiopathic scoliosis and disc degeneration <i>Kazuki Takeda, MD; Naobumi Hosogane, MD; Mitsuru Yagi, MD, PhD; Shinjiro Kaneko, MD; Hitoshi Kono, MD; Masayuki Ishikawa, MD; Youhei Takahashi; Takeshi Ikegami; Kenya Nojiri; Eihiro Okada, MD, PhD; Haruki Funao, MD; Kunimasa Okuyama; Takashi Tsuji; Nobuyuki Fujita, MD, PhD; Narihito Nagoshi, MD, PhD; Osahiko Tsuji, MD, PhD; Yoji Ogura; Ken Ishii, MD; Keio Spine Research Group; Masaya Nakamura, MD, PhD; Morio Matsumoto, MD; Kota Watanabe, MD, PhD; Shiro Ikegawa</i></p>
11:56 - 12:05	<p>Discussion</p>
12:06 - 12:10	<p>Paper #124: Fractional Curves in Adult Spinal Deformity: Is it a Driver of or a Compensation for Coronal Malalignment? <i>Nicolas Plais; Hongda Bao, MD PhD; Han Jo Kim, MD; Munish C Gupta, MD; Christopher I. Shaffrey, MD; Jonathan Charles Elysée, BS; Gregory M. Mundis, MD; Richard Hostin, MD; Douglas C. Burton, MD; Christopher P. Ames, MD; Eric O. Klineberg, MD; Shay Bess, MD; Frank J. Schwab, MD; Virginie LaFage, PhD; International Spine Study Group</i></p>
12:10 - 12:14	<p>Paper #125: Can We Stop the Long Fusion at L5 for Selected Adult Spinal Deformity Patients with Less Severe Disability, Superior Bone Quality, and Less Complex Deformity? <i>Hiroshi Taneichi, MD, PhD; Satoshi Inami, MD, PhD; Hiroshi Moridaira, MD; Daisaku Takeuchi, MD; Tsuyoshi Sorimachi, MD; Haruki Ueda, MD; Yo Shiba, MD; Futoshi Asano, MD; Hiromichi Aoki, MD</i></p>
12:14 - 12:18	<p>Paper #126: Is the “2/3 lumbar lordosis comes from L4-S1” Rule Predictive of Outcome Among Patients with Sagittal Plane Spinal Deformities <i>Gregory M. Mundis, MD; Renaud Lafage; Robert K. Eastlack, MD; Alex Soroceanu, MD, MPH; Virginie LaFage, PhD; Daniel M. Sciubba, MD; Eric O. Klineberg, MD; Han Jo Kim, MD; Justin S. Smith, MD, PhD; Christopher I. Shaffrey, MD; Christopher P. Ames, MD; Robert A. Hart, MD; Frank J. Schwab, MD; International Spine Study Group</i></p>
12:18 - 12:27	<p>Discussion</p>
12:28 - 12:32	<p>Paper #127: Intraoperative neuromonitoring during adult spinal deformity surgery: Alert positive cases in different surgical procedures <i>Go Yoshida; Tomohiko Hasegawa, MD PhD; Yu Yamato; Sho Kobayashi; Shin Oe, MD; Hideyuki Arima; Tatsuya Yasuda; Tomohiro Banno; Yuki Mihara; Hiroki Ushirozako; Daisuke Togawa; Yukihiro Matsuyama, MD, PhD</i></p>
12:32 - 12:36	<p>Paper #128: Does the Use of an Interbody Fusion at the Osteotomy Site Limit the Loss of Correction After 3 Column Osteotomy in Adult Spinal Deformity? <i>Hongda Bao, MD PhD; Jeffrey J Varghese, BS; Han Jo Kim, MD; Munish C Gupta, MD; Christopher I. Shaffrey, MD; Justin S. Smith, MD, PhD; Gregory M. Mundis, MD; Richard Hostin, MD; Douglas C. Burton, MD; Christopher P. Ames, MD; Eric O. Klineberg, MD; Shay Bess, MD; Frank J. Schwab, MD; Virginie LaFage, PhD; International Spine Study Group</i></p>
12:36 - 12:40	<p>Paper #129: Adult Symptomatic Lumbar Scoliosis: Randomized Results from a Dual-Arm Study <i>Michael P Kelly, MD; Elizabeth L. Yanik, PhD; Christopher I. Shaffrey, MD; Steven D. Glassman, MD Leah Yacat Carreon, MD, MSc; Han Jo Kim, MD; Lawrence G. Lenke, MD; Stephen J. Lewis, MD, MSc, FRCSC; Stefan Parent, MD, PhD; Frank J. Schwab, MD; Christine R. Baldus, RN, MHS; Keith H. Bridwell, MD</i></p>
12:40 - 12:49	<p>Discussion</p>
12:49	<p>Adjourn</p>

ABOUT SRS

SCOLIOSIS RESEARCH SOCIETY (SRS)

555 East Wells Street, Suite 1100 Milwaukee, WI 53202

Phone: 414-289-9107

Fax: 414-276-3349

www.srs.org

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

MEMBERSHIP

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

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

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

Senior Candidate Fellowship is limited to senior surgeons, neurosurgeons and to non-physicians members of allied specialties. This candidacy is the path to SRS Senior Active Fellowship. Senior surgeons have the opportunity to become Active Fellows of SRS in two years and not 5 years like the regular Candidate Fellowship track. They must have 20 years of experience (time spent with fellowship and training does not count), be a full professor, head of spine unit or chief of spine division, clinical practice which includes 20% spinal deformity.

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

See website for membership requirement details: www.srs.org/professional/membership

SRS MEMBERSHIP INFORMATION SESSION

Join us and learn more about the Scoliosis Research Society

How to Apply
Benefits of Membership
Leadership Opportunities
Scholarships
Networking
Education

The information session will take place during the networking lunch on Thursday, September 7 from 12:30 - 13:30.

PROGRAMS AND ACTIVITIES

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

WEBSITE INFORMATION

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

For more information and printable membership applications, please visit the SRS website at www.srs.org.

SOCIETY OFFICE STAFF

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Executive Director (tgoulding@srs.org)

Lily Atonio
Education & Program Manager (latonio@srs.org)

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Long Range Planning	David W. Polly, Jr., MD
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Nominating	David W. Polly, Jr., MD
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Patient Education	Kevin M. Neal, MD
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Performance Measures TF	Robert A. Hart, MD
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Translation	Andre Luis F. Andujar, MD
Website	Todd Milbrandt, MD, MS
Worldwide Conference	Benny T. Dahl, MD, PhD, DMSci

2016 AWARD RECIPIENTS

SRS AWARDS

Lifetime Achievement Awards

Presented to a member who has exhibited long and distinguished service to SRS and to spinal deformity research and care:

John E. Lonstein, MD & Harry L. Shufflebarger, MD

Walter P. Blount Humanitarian Award

Presented for outstanding service to those with spinal deformity, and for generosity to the profession and Society:

David A. Spiegel, MD

IMAST AWARDS

The Thomas Whitecloud Awards are given to the Best Basic Science and Best Clinical papers presented at IMAST.

Whitecloud Award for Best Basic Science Paper

Paper #13: The Effect of Anti-Microbial Irrigations on Osteoblasts and Bone Formation: An in Vitro Comparison of Vancomycin, Gentamicin and Povidone-Iodine.

Ashleigh Marie Philp; Matthew Peter Newton Ede, FRCS T&O; Simon W. Jones, PhD

Whitecloud Award for Best Clinical Paper

Paper #9: Incidence of Proximal Junctional Kyphosis in Patients with Adult Spinal Deformity Fused to the Pelvis: A ScolioRisk-1 Sub-analysis

Amit Jain, MD; Floreana Naef Kebaish, MD; Lawrence G. Lenke, MD; Yong Qiu, MD; Yukihiro Matsuyama, MD, PhD; Christopher P. Ames, MD; Michael G. Fehlings, MD, PhD, FRCSC; Benny T. Dahl, MD, PhD; Hossein Mehdian, MD; Kenneth MC Cheung, MD; Frank J. Schwab, MD; Ferran Pellisé, MD; Leah Yacat Carreon, MD, MSc; Christopher I. Shaffrey, MD; Khaled M. Kebaish, MD, FRCSC

ANNUAL MEETING AWARDS

Russell A. Hibbs Awards

The Russell A. Hibbs Award for the Best Basic Research Presentation was presented to Paper #28: The Possible Pathogenesis in Adolescent Idiopathic Scoliosis Based on Experimental Model of Melatonin-deficient C57BL/6J Mice by *Masafumi Machida, MD; Jean Dubousset, MD; Atsushi Miyake, MD, PhD; Mitsuru Yagi, MD, PhD; Masakazu Takemitsu, MD, PhD*

The winner of the Russell A. Hibbs Award for the Best Clinical Research Presentation was awarded to Paper #37: Preventing Curve Progression in Adolescent Idiopathic Scoliosis (AIS) with Calcium and Vitamin D Supplementation - A Randomised Double-blinded Placebo-controlled Trial by *Tsz Ping Lam, MD; Benjamin Hon Kei Yip, PhD; Elisa MS Tam, PhD; Gene Chi Wai Man, PhD; Wayne Lee, PhD; Kwong Man Lee; Fiona Wai Ping Yu, MPH; Yong Qiu, MD; Bobby Kin Wah Ng, MD; Jack C.Y. Cheng, MD*

John H. Moe Award

The John H. Moe Award is given to the Best Basic Science E-Poster at the Annual Meeting & Course. This year the award was presented to E-Poster #281: Medical Complications in 3,519 Surgically Treated Elderly Patients with Adult Spinal Deformity: Comparison of Multicenter Surgeon Maintained vs. Medicare Claims Database by *Y Amit Jain, MD; Hamid Hassanzadeh, MD; Varun Puvanesarajah; Eric O. Klineberg, MD; Michael P. Kelly, MD, MS; D.Kojo Hamilton, MD; Virginie Lafage, PhD; Aaron James Buckland, MBBS, FRACS; Peter G. Passias, MD; Themistocles S. Protopsaltis, MD; Renaud Lafage, MS; Justin S. Smith, MD, PhD; Christopher I. Shaffrey, MD; Khaled M Kebaish, MD, FRCSC; International Spine Study Group*

Louis A. Goldstein Award

The Goldstein Award is given to the Best Clinical E-Poster at the Annual Meeting & Course. The winner of the Louis A. Goldstein Award was E-Poster #200: Results of Shilla Growing Technique in Pre-adolescent Scoliosis by *Khalil Emile Kharrat, MD; Maroun Rizkallah, MD; Amer Sebaaly, BS, MD*

2015 RESEARCH GRANT RECIPIENTS

The SRS Research Grant Committee would like to congratulate the following 2016 grant recipients:

Title of Project	Primary Investigator/Location	Grant Duration	Type of Grant	Amt. Approved
Scoliosis-specific exercises for at-risk mild adolescent idiopathic scoliosis curves: a multi-site preliminary randomized trial	Karina A. Zapata, PT, DPT, PhD/ Dallas, TX, USA	2 Years	SRS-Globus Evidence Based Medicine Grant	\$49,780.00
Computer Algorithm Software for Optimal Placement Pedicle Screws Considering Multiple Levels	David P. Gurd, MD/ Cleveland, OH, USA	1 Year	Small Exploratory Grant	\$9,565.00
Cadaveric Study of the Use of the Magnetic Expansion Control (MAGEC) Rod in the Magnetic Resonance Imaging Scanner	Selina C. Poon, MD/ Los Angeles, CA, USA	1 Year	New Investigator Grant	15,000.00
Motion Analysis in the Axial Plane After Realignment Surgery for Adolescent Idiopathic Scoliosis	Ashish Patel, MD/ Brooklyn, NY, USA	1 Year	SRS-Globus New Investigator Grant	25,000.00
Optimization of Implant Density in AIS Instrumentation Using a Computerized Spine Simulator	Xiaoyu Wang, PhD/ Montreal, QC, Canada	1 Year	SRS-K2M New Investigator Grant	25,000.00
Biomechanical in vitro comparison of pedicle subtraction osteotomy (PSO) and anterior column release (ACR) for severe sagittal imbalance correction	Luigi La Barbera, PhD/ Milan, Italy	1 Year	SRS-Globus New Investigator Grant	25,000.00
3D modeling for magnetically controlled growing rods	Jason Pui Yin Cheung, MBBS (HK)/ Hong Kong, China	2 Years	SRS-Globus new Investigator Grant	15,000.00
Use of Ultrasonic Bone Scalpel in Adolescent Idiopathic Scoliosis - Randomized Clinical Trial	Sumeet Garg, MD/ Aurora, CO, USA	2 Years	SRS-Globus New Investigator Grant	10,000.00
The Ultimate Patient Reported Outcome: Validation of the Patient Generated Index (PGI), Risk Aversion (RA) and Decision Regret (DR) Questionnaires in Adolescent Idiopathic Scoliosis (AIS)	Baron S. Lonner, MD/ New York, NY, USA	2 Years	SRS-Globus Standard Investigator Grant	20,000.00



SRS 52ND ANNUAL MEETING & COURSE

DELEGATE REGISTRATION FORM

PHILADELPHIA, PA, USA • PHILADELPHIA MARRIOTT DOWNTOWN • SEPTEMBER 6-9, 2017

Online Registration
Available at:
www.srs.org/am17

DELEGATE

SRS-0217-693

ADVANCE REGISTRATION DEADLINE: AUGUST 15, 2017 (*Registrations will ONLY be accepted onsite after this date – no exceptions.*)

Delegate Information

SRS ID Number	First (Given) Name	Last (Family) Name	Suffix (Jr., III, etc.)	Degree (MD, PhD, etc.)
Email Address (All correspondence is done by email)				
Institution				
Mailing Address				
City (To appear on badge)		State	Zip/Postal Code	Country (To appear on badge)
Specialty: <input type="checkbox"/> Orthopaedic Surgeon <input type="checkbox"/> Neurosurgeon <input type="checkbox"/> Other:				
Assistant/ Company Personnel Email Address				
Dietary Restrictions/Requirements: Please email any special dietary restrictions or other requirements to meetings@srs.org				

Registration Instructions

1. Select your Annual Meeting registration class and rate in the first column of the registration table below;
2. Select any CME and/or Non-CME Add-Ons you want to attend, as listed in the table below;
3. Write the total fees from all columns;
4. If you wish to register for only one day of the meeting, please use the One Day Registration table.

Registration Class	Annual Meeting* Thurs-Sat, Sept 7-9 <i>(includes Half-Day Course)</i>	CME Add-Ons	Non-CME Add-Ons		TOTAL FEES
		Pre-Meeting Course Wed, Sept 6	Hibbs Society Tues, Sept 5, 1:00-5:00pm	Farewell Banquet Fri, Sept 8, 7:00-10:00pm	
SRS Fellow- Physician	<input type="checkbox"/> \$ 780	<input type="checkbox"/> \$ 250	<input type="checkbox"/> \$ 50	<input type="checkbox"/> \$ 50	
SRS Fellow- Non-Physician	<input type="checkbox"/> \$ 330	<input type="checkbox"/> \$ 250	<input type="checkbox"/> \$ 50	<input type="checkbox"/> \$ 50	
SRS Emeritus Fellow	<input type="checkbox"/> \$ 330	<input type="checkbox"/> \$ 250	<input type="checkbox"/> \$ 50	<input type="checkbox"/> \$ 50	
Non-Member Physician	<input type="checkbox"/> \$ 980	<input type="checkbox"/> \$ 250	<input type="checkbox"/> \$ 50	<input type="checkbox"/> \$ 50	
Non-Member Non-Physician	<input type="checkbox"/> \$ 380	<input type="checkbox"/> \$ 250	<input type="checkbox"/> \$ 50	<input type="checkbox"/> \$ 50	
Resident/ Fellow/ Medical Student	<input type="checkbox"/> \$ 380	<input type="checkbox"/> \$ 150	<input type="checkbox"/> \$ 50	<input type="checkbox"/> \$ 50	
Industry Representative	<input type="checkbox"/> \$ 1030	<input type="checkbox"/> \$ 250	<input type="checkbox"/> \$ 50	<input type="checkbox"/> \$ 50	
Reduced Rate Countries**	<input type="checkbox"/> \$ 380	<input type="checkbox"/> \$ 150	<input type="checkbox"/> \$ 50	<input type="checkbox"/> \$ 50	

*Annual Meeting registration includes entrance to the general and concurrent scientific sessions, lunchtime symposium, Half-day Courses (Thursday, Sept. 7, 12:00-4:00pm), breakfast, breaks, lunches, and the Welcome & Opening Ceremonies on Wednesday, September 6.

**For information on countries that qualify for reduced rate registration, please visit <http://www.srs.org/am17>

Total Fees \$ _____

Payment Information

Checks (U.S. funds drawn on a U.S. bank only) may be made payable and mailed to: Scoliosis Research Society • 555 E. Wells Street, Suite 1100 • Milwaukee, WI 53202

Or provide credit card information complete with billing address:

☐ Check Enclosed ☐ Visa ☐ MasterCard ☐ American Express

Card Number	Expiration Date
Security Code	
Name (As it appears on card)	
Billing Address	
City	State
Zip/Postal Code	Country
Signature (I agree to pay according to the credit card issuer agreement)	

One Day Registration Only

Registration Class	One Day: Wed, Sept 6 Includes Pre-Meeting Course	One Day: Thurs, Sept 7 Includes Half-Day Course	One Day: Fri, Sept 8 Farewell Banquet ticket must be requested separately	One Day: Sat, Sept 9
SRS Fellow- Physician	<input type="checkbox"/> \$ 250	<input type="checkbox"/> \$ 500	<input type="checkbox"/> \$ 500	<input type="checkbox"/> \$ 250
SRS Fellow- Non-Physician	<input type="checkbox"/> \$ 250	<input type="checkbox"/> \$ 500	<input type="checkbox"/> \$ 500	<input type="checkbox"/> \$ 250
SRS Emeritus Fellow	<input type="checkbox"/> \$ 250	<input type="checkbox"/> \$ 500	<input type="checkbox"/> \$ 500	<input type="checkbox"/> \$ 250
Non-Member Physician	<input type="checkbox"/> \$ 250	<input type="checkbox"/> \$ 500	<input type="checkbox"/> \$ 500	<input type="checkbox"/> \$ 250
Non-Member Non-Physician	<input type="checkbox"/> \$ 250	<input type="checkbox"/> \$ 250	<input type="checkbox"/> \$ 500	<input type="checkbox"/> \$ 250
Resident/ Fellow/ Medical Student	<input type="checkbox"/> \$ 150	<input type="checkbox"/> \$ 500	<input type="checkbox"/> \$ 250	<input type="checkbox"/> \$ 150
Industry Representative	<input type="checkbox"/> \$ 250	<input type="checkbox"/> \$ 500	<input type="checkbox"/> \$ 500	<input type="checkbox"/> \$ 250
Reduced Rate Countries**	<input type="checkbox"/> \$ 150	<input type="checkbox"/> \$ 250	<input type="checkbox"/> \$ 250	<input type="checkbox"/> \$ 150

Cancellation Policy: All cancellations must be received in writing. Delegates may fax their cancellation to (414) 276-3349 or email it to meetings@srs.org. Delegates will receive a confirmation and refund within 14 days of receipt of their cancellation notice. SRS will grant a full refund, less a 10% processing fee, for cancellations received in writing on or before August 15, 2017. No refunds will be granted after August 15, 2017.

Waiver: Submission of this registration form and payment of associated fee serves as agreement by the delegate to release the Scoliosis Research Society, the Philadelphia Marriott Downtown and their respective agents, servants, employees, representatives, successors, and assigns, from any and against all claims, demands, causes of action, damages, costs, and expenses, including attorneys' fees, for injury to person or damage to property arising out of attendance at the

52nd Annual Meeting & Course. In addition, the delegate hereby grants permission to use his/her likeness in a photograph or other digital reproduction in any and all of its publications, including website entries, without payment or any other consideration, agreeing that these materials will become the property of SRS which has the right to edit, alter, copy, exhibit, publish or distribute this photo for purposes of publicizing its programs or for any other lawful purpose. Additionally, the delegate waives any right to royalties or other compensation arising or related to the use of the photograph.

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GUEST

SRS-0217-693

ADVANCE REGISTRATION DEADLINE: AUGUST 15, 2017 (*Registrations will ONLY be accepted onsite after this date – no exceptions.*)

Guest Information

SRS ID Number	First (Given) Name	Last (Family) Name	Suffix (Jr., III, etc.)	Degree (MD, PhD, etc.)
---------------	--------------------	--------------------	-------------------------	------------------------

Email Address (All correspondence is done by email.)

Institution

Mailing Address

City (To appear on badge)

State

Zip/Postal Code

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I am a guest of the following REGISTERED delegate:

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Dietary Restrictions/Requirements: Please email any special dietary restrictions or other requirements to meetings@srs.org

Please select from Option A or Options B. ****Please note, guests may only select one option.**

Admission to sessions is NOT included with either guest registration options. **Guests wishing to attend the Scientific Sessions should register as a non-member, non-physician utilizing the delegate registration form.**

Option A: Guest Base Registration Fees

	Advance Registration On or Before August 15, 2017	Onsite Registration September 6-9, 2017
Guest	<input type="checkbox"/> \$300	<input type="checkbox"/> \$350
Farewell Banquet Ticket	<input type="checkbox"/> \$50	

Guest Registration Fees: The guest base registration fee includes entrance to the Welcome Reception & Opening Ceremonies on Wednesday, September 6 as well as use of the Guest Hospitality Suite, including breakfast, on Thursday, September 7 through Saturday, September 9. Farewell Banquet tickets may be added above and optional tours may be added at an additional charge on the website.

Option B: A la Carte Guest Registration Fees

Welcome Reception & Opening Ceremonies	Wednesday, September 6 (6:30pm)	<input type="checkbox"/> \$100
Farewell Banquet	Friday, September 8 (7:00-10:00pm)	<input type="checkbox"/> \$175

Social Event Registration Fees: The social event fee includes entrance to the Welcome Reception & Opening Ceremonies on Wednesday, September 6 and/ or the Farewell Banquet on Friday, September 8. This does not include entrance to the Guest Hospitality Suite, including breakfast, on Thursday, September 7 through Saturday, September 9.

Total Fees \$ _____

Payment Information

Checks (U.S. funds drawn on a U.S. bank only) may be made payable and mailed to: Scoliosis Research Society • 555 E. Wells Street, Suite 1100 • Milwaukee, WI 53202

Or provide credit card information complete with billing address: ☐ Check Enclosed ☐ Visa ☐ MasterCard ☐ American Express

Card number

Security Code

Expiration Date

Name (As it appears on card)

Billing Address

City

State

Zip/Postal Code

Country

Signature (I agree to pay according to the credit card issuer agreement.)

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SRS 52ND ANNUAL MEETING & COURSE

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GROUP

SRS-0217-693

ADVANCE REGISTRATION DEADLINE: AUGUST 1, 2017 (*Registrations will ONLY be accepted onsite after this date – no exceptions.*)

Company/Bill to Information

Company Name

Company Representative

Email Address (Invoice and all confirmations will be sent to this email)

Mailing Address

City

State

Zip/Postal Code

Country (To appear on badge)

Base Registration Fees

Registration Class	Annual Meeting* Thurs-Sat, Sept 7-9	CME Add-Ons	Non-CME Add-Ons	
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Non-Member Non-Physician	\$ 380	\$ 250	\$ 50	\$ 50
Resident/Fellow/Medical Student	\$ 380	\$ 150	\$ 50	\$ 50
Industry Representative	\$ 1030	\$ 250	\$ 50	\$ 50
Reduced Rate Countries*	\$ 380	\$ 150	\$ 50	\$ 50

SRS will verify all member types and apply discounts where delegates are eligible.

*Annual Meeting registration includes entrance to the general and concurrent scientific sessions, lunchtime symposium, Half-day Courses (Thursday, Sept. 7, 12:00-4:00pm), breakfast, breaks, lunches, and the Welcome & Opening Ceremonies on Wednesday, September 6.

**For information on countries that qualify for reduced registration, please visit www.srs.org/am17/registration

Delegate 1

Discount Code: _____

First (Given) Name Last (Family) Name Suffix (Jr., III, etc.) Degree (MD, PhD, etc.)

Delegate Email Address (Must be delegates individual email) Institution

City (To appear on badge) Country (To appear on badge)

Registration Class	Annual Meeting	Pre-Meeting Course	Hibbs Society Meeting	Farewell Banquet
SRS Fellow/Member	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Non-Member	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Industry Rep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Student	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Delegate 2

Discount Code: _____

First (Given) Name Last (Family) Name Suffix (Jr., III, etc.) Degree (MD, PhD, etc.)

Delegate Email Address (Must be delegates individual email) Institution

City (To appear on badge) Country (To appear on badge)

Registration Class	Annual Meeting	Pre-Meeting Course	Hibbs Society Meeting	Farewell Banquet
SRS Fellow/Member	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Non-Member	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Industry Rep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Student	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Delegate 3

Discount Code: _____

First (Given) Name Last (Family) Name Suffix (Jr., III, etc.) Degree (MD, PhD, etc.)

Delegate Email Address (Must be delegates individual email) Institution

City (To appear on badge) Country (To appear on badge)

Registration Class	Annual Meeting	Pre-Meeting Course	Hibbs Society Meeting	Farewell Banquet
SRS Fellow/Member	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Non-Member	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Industry Rep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Student	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Delegate 4

Discount Code: _____

First (Given) Name Last (Family) Name Suffix (Jr., III, etc.) Degree (MD, PhD, etc.)

Delegate Email Address (Must be delegates individual email) Institution

City (To appear on badge) Country (To appear on badge)

Registration Class	Annual Meeting	Pre-Meeting Course	Hibbs Society Meeting	Farewell Banquet
SRS Fellow/Member	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Non-Member	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Industry Rep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Student	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Payment Information

Group Registration Policy: All Group Registrations must be completed and submitted by August 1, 2017. Any Pre-Registration name changes can be made through August 15, 2017 at no cost. After August 15 each name change will be charged an administrative fee of \$100 per badge. Any delegate not included on the group registration form will be treated as an individual registration; delegates registered as individuals will not be added to group registration invoices. All delegates must have their own email address listed under their name to ensure certificates of attendance and CME credits are correctly distributed.

Corporate Supporters and/or Exhibitors with complimentary registration codes; please indicate who the code is being applied to by writing the code next the delegate's name. If no codes are written in, complimentary registrations will be applied to delegate registrations in the order they are listed on the form.

Invoices: An invoice will be provided to company/group representative, for groups registering multiple delegates, one week post the August 15 name change deadline. This invoice will contain all registration fees for all delegates listed; all invoices must be paid by September 1, 2017. Any registration fees, registration name change fees or add-ons made after August 15 and/or onsite will be invoiced separately. Post meeting invoices will be sent out 4 weeks following the Annual Meeting.

Cancellation Policy: All cancellations must be received in writing. Delegates may fax their cancellation to (414) 276-3349 or email it to meetings@srs.org. Delegates will receive a confirmation and refund within 14 days of receipt of their cancellation notice. SRS will grant a full refund, less a 10% processing fee, for cancellations received in writing on or before August 15, 2017. No refunds will be granted after August 15, 2017.

Waiver: Submission of this registration form and payment of associated fee serves as agreement by the delegate to release the Scoliosis Research Society, the Philadelphia Marriott Downtown and their respective agents, servants, employees, representatives, successors, and assigns, from any and against all claims, demands, causes of action, damages, costs, and expenses, including attorneys' fees, for injury to person or damage to property arising out of attendance at the 52nd Annual Meeting & Course. In addition, the delegate hereby grants permission to use his/her likeness in a photograph or other digital reproduction in any and all of its publications, including website entries, without payment or any other consideration, agreeing that these materials will become the property of SRS which has the right to edit, alter, copy, exhibit, publish or distribute this photo for purposes of publicizing its programs or for any other lawful purpose. Additionally, the delegate waives any right to royalties or other compensation arising or related to the use of the photograph.

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- ☐ I do not wish to be included on the delegate list provided to corporate supporters
☐ I do not wish to be included on any published delegate list including programs, mobile apps, etc.

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We are pleased to acknowledge and thank those companies that provided financial support to SRS in 2016-2017.

Support levels are based on total contributions throughout the year and include the Annual Meeting, IMAST, Global Outreach Scholarships, Edgar Dawson Memorial Scholarships, SRS Traveling Fellowships and the Research Education Outreach (REO) Fund.

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I WANT TO BE
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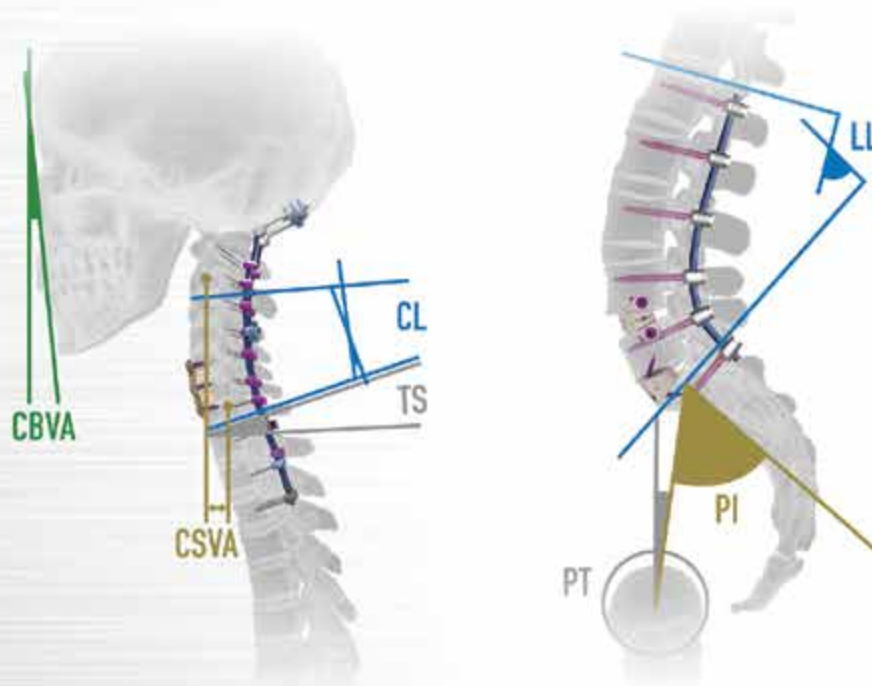
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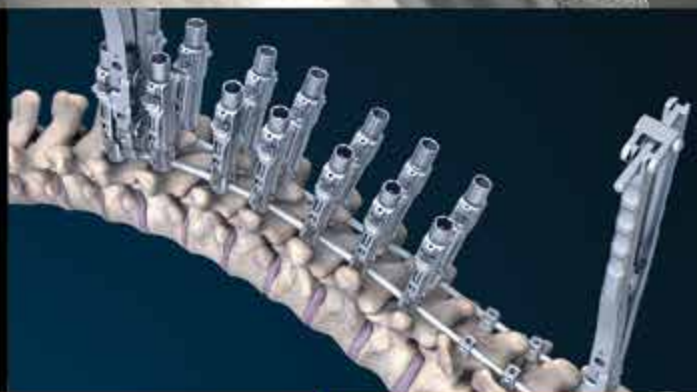


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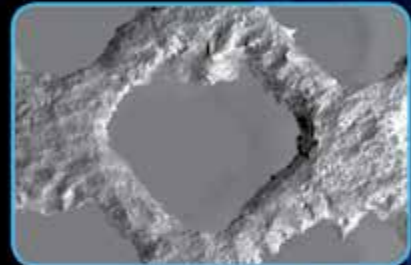
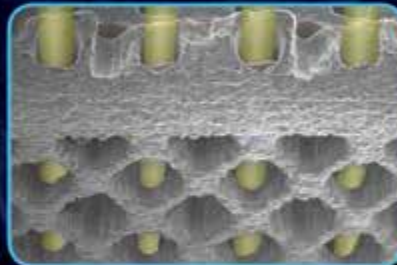
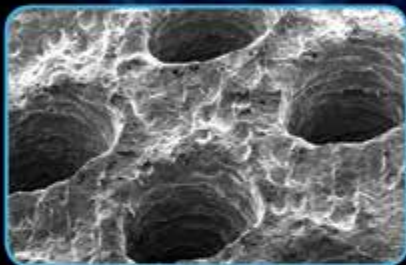
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¹Olivero-Navarrete, R., Hyzy, S.L., Sklar, P.J., Schneider, J.M., Schwartz, Z., and Barbara D. Boyan. "Implant Materials Generate Different Peri-implant Inflammatory Factors." *Spine (Phila Pa 1976)* 40, 6: 399-404.

²Preclinical testing may not represent clinical results.



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