



# SCOLIOSIS RESEARCH SOCIETY

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## 43<sup>rd</sup> Annual Meeting & Course Reaching New Heights in 2008!

**September 10-13, 2008**

Grand America Hotel • Salt Lake City, Utah, USA

**PRELIMINARY PROGRAM**

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## 2007 Corporate Partners

We are pleased to acknowledge and thank those companies that provided financial support to SRS in 2007. Support levels are based on total contributions throughout the year and include the Annual Meeting, IMAST, Worldwide Regional Meetings, Global Outreach Scholarships, Edgar Dawson Memorial Scholarships, SRS Traveling Fellowships and the Research Endowment Fund. Their support has helped SRS to offer high quality medical meetings and courses throughout the world, fund spinal deformity research, develop new patient materials, and provide educational opportunities for young surgeons and those from developing nations.

### Double Diamond Level Support



### Diamond Level Support



### Platinum Level Support



### Gold Level Support

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### Bronze Level Support

Abbott Spine, Blackstone, Cervitech, Globus Medical, Orthovita, Paradigm Bio/Surgi, Paradigm Spine Sentient Monitoring, Showa Ika Kohgyo Co. Ltd., Spine Vision, Surgicraft, Trans1, Zimmer Spine

### Donor Level Support

Allez Spine, Alphatech Spine, Biospace Med., Jackman Group, LDR Spine USA, Inc.



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## SCOLIOSIS RESEARCH SOCIETY

43rd Annual Meeting & Course  
September 10-13, 2008  
Grand America Hotel  
Salt Lake City, Utah, USA

## SRS BOARD OF DIRECTORS

George H. Thompson, MD, President  
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Lawrence G. Lenke, MD, Director  
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### Dates to Remember

August 4, 2008 – Early registration deadline  
August 9, 2008 – Housing reservation deadline  
August 20, 2008 – Advanced registration deadline  
August 20, 2008 – Registration cancellation deadline

### Future SRS Educational Events

#### Annual Meetings

September 23- 26, 2009 – San Antonio, Texas, USA  
September 22- 25, 2010 – Kyoto, Japan  
September 21-24, 2011 – Louisville, Kentucky, USA

#### International Meeting on Advanced Spine Techniques (IMAST)

July 8-11, 2008 - Hong Kong  
July 15-18, 2009 - Vienna, Austria  
July 21-24, 2010 - Toronto, Canada

#### Worldwide Regional Meetings

September 24-25, 2008 - Cordoba, Argentina  
- In conjunction with the Argentine Spine Society  
October 2-4, 2008 – New Delhi, India  
- In cooperation with the Association of Spine Surgeons of India (ASSI) and the Delhi Spine Society

For more information on these upcoming events, please visit the SRS Web site at [www.srs.org](http://www.srs.org).

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Welcome!

We are pleased to have this opportunity to host the 43rd Annual Meeting & Course of the Scoliosis Research Society in Salt Lake City, Utah, USA. The scientific meeting will be of the greatest interest and we look forward to welcoming you to the “Crossroads of the West.”

Utah is the financial, academic, cultural and recreational center of the Intermountain West. While in Utah, you will have access to many historical points of interest. Utah is home to five national parks including Bryce Canyon, Zion and Arches. There are seven national monuments with scenic and scientific interest such as Dinosaur National Monument. From southern Utah, there is also access to the north rim of Grand Canyon National Park, a great scenic wonder that is often missed by the casual traveler. Mountain biking in Moab, rafting the Colorado and Green Rivers, hiking in the Uinta Mountains to the east of Salt Lake City or just relaxing in one of the many resorts can renew your enthusiasm for life. Come back a few weeks after the meeting and enjoy the “Greatest Snow on Earth.” It’s not just a catchy slogan.

I hope that you will plan to spend some quiet time in Utah before or after the meeting. The people are friendly and you will find them helpful.

Again, we are eager to see you in Salt Lake City at the Annual Meeting of the SRS.

A handwritten signature in cursive script that reads "James W. Ogilvie".

James W. Ogilvie, MD  
2008 Annual Meeting Local Host





# 43<sup>rd</sup> Annual Meeting & Course

## Reaching New Heights in 2008!

### GENERAL MEETING INFORMATION

#### Meeting Description

The Scoliosis Research Society 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. Presentations at the Annual Meeting & Course are given by leading experts in the field and have value for health care professionals who treat spinal deformities at all levels and in all ages. Over 100 papers will be presented on an array of topics, including adolescent idiopathic scoliosis, growing spine, kyphosis, adult deformity, trauma, neuromuscular scoliosis and tumors.

#### Learning Objectives

At the conclusion of the SRS Annual Meeting & Course, participants should be able to:

1. Recognize the potential for complications related to particular surgical techniques that allow them to take steps to avoid or minimize them.
  - Accurately estimate the risks of infection, neurologic damage and failure of fixation after spinal surgery.
  - Discuss at least two methods to minimize blood loss during spinal surgery.
  - Optimize selection of proximal and distal fusion levels in AIS and adult deformity.
  - Discuss revision rates after deformity surgery and their predictors.
2. Analyze emerging options for treatment of different spinal deformities and related conditions.
  - Analyze the role of casts, growing rods, VEPTR and stapling in early-onset spinal deformity.
3. Assess the role of genetic testing in predicting the course of spinal deformity in children and adolescents.
  - List three theories of etiology of "idiopathic" scoliosis and discuss evidence.
4. Accurately describe classifications for AIS and how they guide treatment.
  - Discuss how to predict and quantify the effect of spinal osteotomies.
5. Analyze treatment options and complications for both primary and metastatic spinal tumors.
6. Discuss current research on optimizing recovery after spinal cord injury.
7. Discuss treatment and results of treatments for degenerative scoliosis.
8. Understand outcomes assessment methods for spinal deformity.

#### Target Audience

Presentations at the SRS Annual Meeting & Course will have value for physicians and allied health personnel who treat spinal deformities at all levels and in all ages of patients. Medical students, residents, fellows and researchers with an interest in spinal deformities will also benefit from the materials presented.

#### Continuing Medical Education Credit Designation Scientific Program

Medical Education Resources designates this educational activity for a maximum of **16.5 AMA PRA Category 1 Credits<sup>TM</sup>**. Physicians should only claim credit commensurate with the extent of their participation in the activity.

#### Pre-Meeting Course

Medical Education Resources designates this educational activity for a maximum of **7.0 AMA PRA Category 1 Credits<sup>TM</sup>**. Physicians should only claim credit commensurate with the extent of their participation in the activity.

Both of these CME activities are planned and produced in accordance with ACCME Essentials.

#### Language

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

#### No Smoking Policy

Smoking is not permitted during any meeting activity or event.

#### Salt Lake City

Combining the amenities of a major metropolitan area with the friendliness of a small, western city, Salt Lake City is fast becoming one of America's foremost destinations. A beautiful, safe, and vibrant city, Salt Lake City combines unparalleled access to natural recreation, dynamic nightlife, remarkable history, and warm hospitality. Hosting the Olympic Winter Games of 2002 enhanced the community's profile as a world-class travel destination, while showcasing Salt Lake City as an unspoiled, family-friendly destination.

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## Getting There

The Salt Lake International Airport offers flights on 14 major airlines, and is Delta Airlines' second largest hub. The airport is just 10 minutes from downtown. Taxis, limousines, buses, and shuttles provide airport service to anywhere in the valley. Many hotels provide complimentary airport shuttle service. For more information, visit [www.slcairport.com](http://www.slcairport.com).

## Passports and Visas

All visitors from outside the USA need a valid passport for entry. In some cases, a visa is required. Definitive requirements for your country may be obtained from your nearest United States embassy or consulate. Additional information can be found online at [www.unitedstatesvisas.gov](http://www.unitedstatesvisas.gov).

## Getting Around

Utah Transit Authority (UTA) provides over 100 bus routes throughout an 1,800 square-mile area. UTA also provides light-rail service, airport transportation, service to ski resorts in winter, and door-to-door transportation for disabled passengers. Fares within the valley are \$1.50 for two hours or \$4.00 for an all-day pass. A free fare zone is available downtown.

## Area Attractions

- Utah Olympic Park
- The Gateway– Open-air shopping, dining, and entertainment at over 115 shops and restaurants.
- Discovery Gateway– Located in downtown Salt Lake City, Utah's premier children's museum, motivates families to imagine, discover, and explore.
- Clark Planetarium and IMAX®
- Historic Temple Square– A 10-acre plot in the heart of downtown featuring the 6-spired Salt Lake Temple and the domed Tabernacle, home of the world-famous Mormon Tabernacle Choir. The public is invited to the Tabernacle Choir rehearsals on Thursdays from 8:00 - 9:30 pm.
- Beehive House– Official residence of Brigham Young, built in 1854.
- Family History Library– The largest repository of genealogical records in the world.
- Daughters of Utah Pioneers, Pioneer Memorial Museum
- Shops and Services at Library Square– Inside Salt Lake's magnificent Main Library is a distinctive collection of shops and services.
- This Is The Place Heritage Park
- Utah Museum of Fine Arts
- Red Butte Garden– Botanical Gardens, gift shop, orangerie indoor garden, outdoor concert series, and children's garden.

More information about Salt Lake City is available online at [www.visitsaltlake.com](http://www.visitsaltlake.com).

## Climate

Fall is the favorite season of many who visit and live in Utah. Vibrant colors splash across the mountains and canyons as the cooler temperatures turn the leaves all shades of gold, purple, red, green, and brown. Average temperatures reach highs of 78° F (25.5° C) and evening lows of 57° F (14° C). However, mountain areas may be as much as 20° cooler.

## Attire

Business (suits) or business casual (polo or dress shirts, sport coats) are appropriate for meeting sessions. Casual attire is fine for the Welcome and Farewell Receptions (please, no shorts).

## Insurance/Liabilities and Disclaimer

The 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 or Pre-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.

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

## Members Business Meetings

All SRS members are invited to the Members Business Meetings on Thursday, September 11 through Saturday, September 13 from 6:30 am – 7:40 am. Committee Chairs will share their reports, as well as reports from the SRS Traveling Fellows and Edgar Dawson Scholarship recipients. A hot breakfast buffet will be served.

## Non-Members Continental Breakfast

All non-members are invited to meet with their colleagues and network over coffee and a continental breakfast on Thursday, September 11 through Saturday, September 13 from 6:30 am – 7:40 am.



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### Accompanying Persons Hospitality Room

Spouses, partners, and friends of SRS meeting attendees are welcome to meet and plan their days over a continental breakfast. The Hospitality Room is open Thursday, September 11 through Saturday, September 13 from 7:00 am – 10:00 am. Accompanying persons must be registered with SRS to access the Hospitality Room.

### REGISTRATION

#### Registration Procedures

- Annual Meeting registration fees include admission to all education sessions beginning at 8:00 am on Thursday, September 11, (with the exception of Instructional Course Lectures) as well as the Opening Ceremonies & Reception, Farewell Reception, breakfast, coffee breaks, lunch on full days, and all meeting materials.
- The Pre-Meeting Course, which includes the Hibbs Society meeting, requires a separate registration and fee of \$125 USD. You may register for both the Pre-Meeting Course and the Annual Meeting on the enclosed registration form.

- There is no extra fee for the Educational Symposia on Wednesday and Friday, but pre-registration is required.
- There is an additional charge of \$25 USD for the Instructional Course Lectures (ICLs) on Thursday afternoon. Pre-registration is required. Lunch will be provided for ICL registrants.
- Name badges are required. Name substitutions can be made to the SRS office until August 20, 2008. Any name substitutions made onsite will result in a \$50 processing fee. If the original registrant shows up at the meeting, he/she will be responsible for the onsite registration fee.
- All registration fees are listed in US dollars.

#### \*Reduced Rate Countries

For information on countries that qualify for reduced rate registration, please visit the SRS Web site at [www.srs.org](http://www.srs.org).

### Registration Fees

<b>Pre-Meeting Course</b> (including the Hibbs Society Meeting)	Early Registration Before August 4, 2008	Advance Registration August 4 – August 20, 2008	Onsite Registration After August 20, 2008
All Categories	\$125	\$125	\$150
<b>Annual Meeting Registration Fees</b>	Early Registration Before August 4, 2008	Advance Registration August 4 – August 20, 2008	Onsite Registration After August 20, 2008
SRS Fellows – Physicians	\$750	\$800	\$850
SRS Fellows – Non-Physicians	\$300	\$350	\$400
SRS Emeritus Fellows	\$300	\$350	\$400
Non-Member Physicians	\$900	\$950	\$1,000
Non-Member Allied Health	\$350	\$400	\$450
Residents/Fellows/Medical Students	\$350	\$400	\$450
Member Delegates from Reduced Rate Countries*	\$300	\$350	\$400
Non-Member Delegates from Reduced Rate Countries*	\$350	\$400	\$450
Industry Representatives	\$900	\$950	\$1,000
Accompanying Persons	\$350	\$350	\$350
<i>*Visit the SRS Web site at <a href="http://www.srs.org">www.srs.org</a> for a list of reduced rate countries</i>			

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## Cancellation Policy

If written or E-mail notification is received by August 20, the SRS will grant a refund less a \$50 processing fee for the Annual Meeting and a \$30 processing fee for the Pre-Meeting Course. Please contact the Scoliosis Research Society, 555 E. Wells St., Suite 1100, Milwaukee, WI 53202-3823, USA; fax to 1-414-276-3349; or E-mail [info@srs.org](mailto:info@srs.org).

In the event of a natural disaster (including, but not limited to, fire, flood, severe weather, and earthquake) that makes attendance to this meeting impossible, SRS will grant full refunds. Written or E-mail requests for refunds must be received within 15 business days of the event.

## Wire Transfers

You may also pay for your Annual Meeting 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.

## HOTEL INFORMATION

Hotel reservations for the Scoliosis Research Society's 2008 Annual Meeting & Course in Salt Lake City, Utah, USA are now available at two hotels:

### Grand America Hotel (Meeting Venue)

555 South Main Street  
Salt Lake City, Utah, USA 84111  
Phone Reservations: 1-800-621-4505  
Online Reservations: Visit the SRS Web site at [www.srs.org](http://www.srs.org) for a link to online reservations.

### Grand America Group Room Rate:

\$239 Single/Double Occupancy – Premier Room  
\$259 Single/Double Occupancy – Executive Suite

Please identify yourself as an attendee of the Scoliosis Research Society Annual Meeting to receive the group rate. These rates are subject to the appropriate state/local taxes in effect at the time of the meeting. This group rate is available three (3) days before and three (3) days after the main meeting dates, based on room availability.

### Grand America Room Reservations Deadline:

**August 9, 2008**

After this date, reservations will be honored based on space/rate availability.

### Little America Hotel (Rooms Only)

500 South Main Street  
Salt Lake City, Utah, USA 84101  
Phone Reservations: 1-800-437-5288  
Online Reservations: Visit the SRS Web site at [www.srs.org](http://www.srs.org) for a link to online reservations.

### Little America Group Room Rate:

\$179 Single/Double Occupancy – Tower Room

Please identify yourself as an attendee of the Scoliosis Research Society Annual Meeting to receive the group rate. These rates are subject to the appropriate state/local taxes in effect at the time of the meeting.

### Little America Room Reservations Deadline:

**August 9, 2008**

After this date, reservations will be honored based on space/rate availability.



# Program At A Glance

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
6:00						
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## Meeting Outline

### Monday, September 8, 2008

7:00 am – 5:00 pm Board of Directors Meeting

### Tuesday, September 9, 2008

7:00 am – 5:00 pm SRS Committee Meetings –  
*See Registration Desk for Schedule*

2:00 pm – 6:00 pm Poster Set-Up

2:00 pm – 6:00 pm Registration Open

7:00 pm – 10:00 pm SRS Leadership Dinner  
(by invitation only)

### Wednesday, September 10, 2008

6:30 am – 5:00 pm Registration Open

6:30 am – 5:00 pm Poster & E-Poster Exhibits,  
Internet Café

7:30 am – 11:30 am Pre-Meeting Course –  
Osteobiologics  
*(additional fee required)*

11:30 am – 12:30 pm Lunch Break

11:30 am – 12:30 pm Educational Symposium

12:30 pm – 5:00 pm Pre-Meeting Course – Hibbs  
Society Meeting - Osteotomies  
*(additional fee required)*

6:30 pm – 7:30 pm Opening Ceremonies

7:30 pm – 9:00 pm Welcome Reception

### Optional Tours

8:00 am – 12:00 pm Historic City Tour

1:30 pm – 4:30 pm Shaking the Family Tree Tour

### Thursday, September 11, 2008

6:30 am – 4:00 pm Registration Open

6:30 am – 4:00 pm Poster & E-Poster Exhibits,  
Internet Café

6:30 am – 7:40 am Members Business Meeting

6:30 am – 7:40 am Non-Members Continental  
Breakfast

7:00 am – 10:00 am Accompanying Persons  
Hospitality Room  
*(must be registered)*

7:55 am – 12:11 pm Scientific Program

1:00 pm – 4:00 pm Instructional Course Lectures  
*(additional fee required)*

## Optional Tours & Sports

12:30 pm Edgar Dawson Memorial Golf  
Tournament - Thanksgiving  
Point Golf Club

12:30 pm – 5:30 pm Hike the Hills of Park City

12:30 pm – 5:30 pm Rails to Trails

12:30 pm – 6:00 pm Fly Fishing

1:30 pm – 4:30 pm Shaking the Family Tree Tour

1:30 pm – 4:30 pm Doubles Tennis Tournament

1:30 pm – 5:30 pm Historic City Tour

1:30 pm – 5:30 pm Red Butte Garden & This  
Is The Place Heritage Park

5:30 pm – 9:30 pm Supper & Song

### Friday, September 12, 2008

6:30 am – 5:15 pm Registration Open

6:30 am – 5:15 pm Poster & E-Poster Exhibits,  
Internet Café

6:30 am – 7:40 am Members Business Meeting

6:30 am – 7:40 am Non-Members Continental  
Breakfast

7:00 am – 10:00 am Accompanying Persons  
Hospitality Room  
*(must be registered)*

7:55 am – 5:05 pm Scientific Program

12:16 pm – 1:20 pm Lunch Break

12:16 pm – 1:20 pm Educational Symposium

7:00 pm – 10:00 pm Farewell Reception –  
Clark Planetarium & IMAX®

### Optional Tours

9:00 am – 2:00 pm Thanksgiving Point & Gardner  
Village

1:30 pm – 5:30 pm Violins & Chocolate

### Saturday, September 08, 2007

6:30 am – 1:00 pm Registration Open

6:30 am – 1:00 pm Poster & E-Poster Exhibits,  
Internet Café

6:30 am – 7:40 am Members Business Meeting

6:30 am – 7:40 am Non-Members Continental  
Breakfast

7:00 am – 10:00 am Accompanying Persons  
Hospitality Room *(must be registered)*

7:55 am – 12:47 pm Scientific Program

12:47 pm Meeting Adjourns

### Optional Tour

8:45 am – 12:45 pm Red Butte Garden and This Is  
The Place Heritage Park



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## PRE-MEETING COURSE

### Osteobiologics and Osteotomies

Wednesday, September 10, 2008

7:30 am - 5:00 pm

*Additional Registration Fee Required*

### OSTEOBIOLOGICS PRELIMINARY AGENDA

7:30 am - 11:30 am

**Section Chairman:** Steven D. Glassman, MD

7:30 - 8:45 am

Basic Science for Surgeons: How BMPs Work and What They May Do in the Future

**Moderator:** Jeffrey C. Wang, MD

- 7:30 - 7:35 am Introduction  
Jeffrey C. Wang, MD
- 7:35 - 7:50 am The effect of BMPs on bone healing in an intercalary graft model  
Paul T. Rubery, Jr., MD
- 7:50 - 8:05 am Mechanisms of bone healing in a primate posterolateral fusion model  
Munish C. Gupta, MD
- 8:05 - 8:20 am Potential for BMPs to alter disc healing  
Tushar Patel, MD
- 8:20 - 8:35 am Can BMP binding proteins increase efficiency?  
Jeffrey C. Wang, MD
- 8:35 - 8:45 am Questions and Discussions

8:45 - 9:00 am **Break**

9:00 - 10:10 am

Osteobiologics in Clinical Practice: The Lumbar Degenerative Experience

**Moderator:** Steven D. Glassman, MD

- 9:00 - 9:15 am An evidence-based approach to the choice of bone graft options: A framework (paradigm) for making informed decisions  
Sigurd H. Berven, MD
- 9:15 - 9:30 am Anterior interbody grafting options  
Steven M. Mardjetko, MD, FAAP
- 9:30 - 9:45 am Posterolateral and posterior interbody grafting options  
Todd J. Albert, MD
- 9:45 - 10:00 am Complications and concerns  
Steven D. Glassman, MD
- 10:00 - 10:10 am Questions and Discussion

10:10 - 10:25 am **Break**

10:25 - 11:25 am

Osteobiologics in Spinal Deformity Surgery

**Moderator:** John R. Dimar, II, MD

- 10:25 - 10:40 am Bone grafting options for pediatric deformity  
Randy R. Betz, MD
- 10:40 - 10:55 am Bone grafting options for Adult Deformity  
Timothy R. Kuklo, MD, JD
- 10:55 - 11:30 am Panel with case reviews  
**Moderator:** John R. Dimar, II, MD  
**Panelists:** Randy R. Betz, MD  
Timothy R. Kuklo, MD, JD  
Munish C. Gupta, MD  
Sigurd H. Berven, MD

### HIBBS SOCIETY PRELIMINARY AGENDA

**The afternoon session of this year's Pre-Meeting Course is supported by the Hibbs Society.**

Starting in 2001, 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 preceding or following the SRS Annual Meeting. Hibbs Society 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.

Spinal Osteotomies and Their Place in Spinal Deformity Treatment

12:30 pm - 5:00 pm

**Section Chairman:** Robert W. Gaines, MD

- 12:30 - 12:40 pm Goals of Sagittal Plane Realignment: Planning ideal spino-pelvic balance  
Frank Schwab, MD
- 12:40 - 1:20 pm **CHILDREN**
- 12:40 - 12:55 pm When/how to use osteotomy correction for neuromuscular scoliosis  
John P. Dormans, MD
- 12:55 - 1:05 pm Osteotomy correction in short stature patients  
TBD
- 1:05 - 1:20 pm Panel Discussion: Pediatric patients (less than risser 0)  
**Moderator:** R. Jay Cummings, MD  
**Panelists:** John P. Dormans, MD  
Behrooz A. Akbarnia, MD  
Others TBD

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## 1:20 - 2:15 pm

### ADOLESCENTS

- 1:20 - 1:30 pm Ponte type osteotomy for spinal deformity  
Harry L. Shufflebarger, MD
- 1:30 - 1:40 pm Assymetric PSO for thoracic scoliosis  
Harry L. Shufflebarger, MD
- 1:40 - 1:55 pm Vertebral column resection for AIS  
Lawrence G. Lenke, MD
- 1:55 - 2:15 pm Panel Discussion: AIS patients (Risser 0-5)  
**Moderator:** TBD  
**Panelists:** Harry L. Shufflebarger, MD  
Lawrence G. Lenke, MD

## 2:15 - 2:30 pm Break

## 2:30 - 3:45 pm

### YOUNG ADULTS AND OLDER ADULTS

- 2:30 - 2:45 pm Pedicle subtraction osteotomy  
Keith H. Bridwell, MD
- 2:45 - 3:00 pm Advanced PSO with multiple level vertebrectomy  
Oheneba Boachie-Adjei, MD
- 3:00 - 3:15 pm Prevention of progressive adult scoliosis by routine anterior and posterior instrumentation and L5 resection for ptosis  
Robert W. Gaines, Jr., MD
- 3:15 - 3:45 pm Panel Discussion: Adult osteotomies  
**Moderator:** Steven D. Glassman, MD  
**Panelists:** Keith H. Bridwell, MD  
Oheneba Boachie-Adjei, MD  
Robert W. Gaines, Jr., MD

## 3:45 - 4:00 pm Break

- 4:00 - 5:00 pm Panel Discussion: "Avoiding Disasters"  
**Moderator:** Robert W. Gaines, Jr., MD  
**Panelists:** All Speakers

## EDUCATIONAL EVENTS

*Pre-registration required. Space is limited.*

### Wednesday, September 10

#### Educational Symposium

#### Understanding the SRS Roadmap to Financial Success 11:30 am – 12:30 pm

*No additional registration fee necessary. Pre-registration required. Space is limited.*

This 45-minute symposium will review the concept of the SRS roadmap to financial success. This is a program which pictorially describes the opportunities available to each and every member of the SRS to become involved in supporting SRS-funded research to advance the care of patients with spinal deformity.

### Thursday, September 11

#### Instructional Course Lectures

#### Experimental Background of Growth Modulation on the Treatment of Growing Spine Deformities 1:00 pm – 4:00 pm

*\$25 Pre-registration required. Space is limited.*

Management of growing spine deformities has been one of the challenging fields of spine surgery. In recent years, both growing rod and VEPTR techniques have gained popularity because of their promising results. The problem of preserving growth potential of the chest cage and spine while controlling spine deformity is still not completely solved. Current methods, unfortunately, are still far from ideal solutions. We have to have more simple and effective methods to overcome this problem. Recently, many researchers are interested in investigating the mechanism of the development of spine deformities and possible ways to modulate growth potential. This session will explore what we know, where we are and which way to follow.

#### 3D Scoliosis Evaluation and Classification

#### 1:00 pm – 4:00 pm

*\$25 Pre-registration required. Space is limited.*

The SRS 3D Classification Committee will provide up-to-date information on their progress in the development of a 3D Scoliosis Classification System. This will consist of 3D evaluation parameters including the CHVA (center hip vertical axis), the 3D coordinate of the spinal vertical axis. A newly developed "Da Vinci" model of 3D scoliosis representation will be discussed as a means of 3D curve classification and communication.



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### AAOS Communication Skills

1:00 pm – 4:00 pm

*\$25 Pre-registration required. Space is limited.*

Communication skills are important in the patient/physician relationship for both understanding and trust. Improved patient and physician satisfaction, adherence to treatments, outcomes, and reduced liability have all been reported with better communication. Because communication skills can be taught, orthopaedic surgeons should strive to improve these skills throughout our careers. Session participants consider specific communication techniques and discuss specific video vignettes of new patient interviews.

### Friday, September 12

#### Educational Symposium

#### Global Outreach Program: Tuberculosis – Infections of the Spine

12:16 pm – 1:20 pm

*No additional registration fee necessary. Pre-registration required. Space is limited.*

Guest speakers will discuss Tuberculosis in developing areas such as India and Africa. Two previous scholarship recipients will present how their experiences with the GOP scholarship have helped them. Dr. Isador Lieberman will present “Integrating Clinical Care with Education” based on his experience with his Uganda mission.

#### Annual Meeting Scientific Sessions

Thursday, September 11, 2008 7:55 am through 12:47 pm on Saturday, September 13, 2008

For a full schedule see page 12.

### Annual Meeting Invited Lectures

**Dinosaurs: New Views on Ancient Bones** by Scott Sampson, PhD will be this year’s **Howard Steel Lecture**. Dr. Sampson is a Research Associate Professor of Geology & Geophysics and Research Curator at the Utah Museum of Natural History. The Steel Lecture will take place on Wednesday, September 10, 2008, during the Opening Ceremonies.

The 2008 **Harrington Lecture** will be announced online and additional information will be distributed with your Final Program.

The 2008 **Lifetime Achievement Award Lecture** will be presented on Saturday, September 13, 2008. The Lifetime Achievement Award recipient is chosen from among the SRS membership, based on long and distinguished service to the Society and to spinal deformity research and care. The 2008 recipient will be announced this summer, and will be invited to speak at the SRS Annual Meeting.



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## SRS Annual Meeting Scientific Program

Thursday, September 11, 2008

7:55 - 8:00 am Welcome  
Announcements

### SESSION I

**Moderators:** Vernon T. Tolo, MD  
Laurel C. Blakemore, MD

### Adolescent Idiopathic Scoliosis

8:00 - 8:04 am **Risk Factors for Distal Adding-On**  
Paper #1 **Identified: What to Watch Out For**  
*John Schlechter, DO; Peter O. Newton, MD; Vidyadhar V. Upasani, MD; Burt Yaszay, MD; Lawrence G. Lenke, MD; Randal R. Betz, MD; Thomas G. Lowe, MD; Harms Study Group*

8:04 - 8:08 am **Accelerated Disc Degeneration below**  
Paper #2 **Posterior Spinal Fusion for Idiopathic Scoliosis: A Long-Term MRI and Clinical Follow-Up**  
*Thomas Lawhorne, MD; Daniel W. Green, MD, FACS; Douglas N. Mintz, MD; Bernard A. Rawlins, MD; Stephen W. Burke, MD; Roger F. Widmann, MD; Oheneba Boachie-Adjei, MD*

8:08 - 8:12 am **Subjacent Disc Wedging after Anterior**  
Paper #3 **Spinal Fusion for Adolescent Idiopathic Scoliosis: The Fate of the "Jacked" Lumbar Disc**  
*Kathryn A. Keeler, MD; Keith H. Bridwell, MD; Lawrence G. Lenke, MD; Jennifer Flynn, BS*

8:12 - 8:21 am Discussion

8:22 - 8:26 am **Genetic Profile Predicts Curve**  
Paper #4 **Progression in Adolescent Idiopathic Scoliosis**  
*Kenneth Ward, MD; Lesa M. Nelson, BS; Rakesh Chettier, MS; John T. Braun, MD; James W. Ogilvie, MD*

8:26 - 8:30 am **Genetic Association Study of Collagen**  
Paper #5 **I $\alpha$ 2 Gene in Adolescent Idiopathic Scoliosis - A Study of 520-Cases**  
*Hiu Yan Yeung, PhD; Prof. Nelson L. Tang; Vivian W. Hung; Rachel Kwok; Kwong Man Lee, PhD; Ling Qin; Bobby Kin wah Ng, MD; Yong Qui, MD; Jack Chun Yiu Cheng, MD*

8:30 - 8:34 am **Predicting Brace-Resistant Adolescent**  
Paper #6 **Idiopathic Scoliosis**  
*James W. Ogilvie, MD; Lesa M. Nelson, BS; Rakesh Chettier, MS; Therese Smith-Berry; Kenneth Ward, MD*

8:34 - 8:43 am Discussion

8:44 - 8:48 am **Revision Surgery after 1057 Primary**  
Paper #7 **Spine Fusions for Idiopathic Scoliosis over 19 Years: Identification of Causative Factors**  
*Scott J. Luhmann, MD; Lawrence G. Lenke, MD; Keith H. Bridwell, MD*

8:48 - 8:52 am **Multiple Level Simultaneous Front and**  
Paper #8 **Back Osteotomies of the Fusion Mass for Correction of Rigid Idiopathic Scoliosis with Failed Instrumentation**  
*Yasser ElMiligui, MD, FRCS; Wael Koptan, MD; Hazem B. Elsebaie, FRCS, MD*

8:52 - 8:56 am **Posterior Vertebral Column Resection**  
Paper #9 **(VCR) for Severe Pediatric Deformity: Minimum 2-Year Follow-Up on 29 Consecutive Patients**  
*Lawrence G. Lenke, MD; Patrick T. O'Leary, MD; Brenda A. Sides, MA; Linda Koester; Marsha Hensley; Keith H. Bridwell, MD*

8:56 - 9:05 am Discussion

9:06 - 9:10 am **Increase Patient Satisfaction after Fusion**  
Paper #10 **for Adolescent Idiopathic Scoliosis by Minimizing the Deformity-Flexibility Quotient**  
*Vidyadhar V. Upasani, MD; Peter O. Newton, MD; Jeff B. Pawelek, BS; Tracey P. Bastrom, MA; Lawrence G. Lenke, MD; Thomas G. Lowe, MD; David H. Clements, III, MD; Baron S. Lonner, MD; Randal R. Betz, MD; Harms Study Group*



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## Thursday, September 11, 2008 (continued)

9:10 - 9:14 am **Selective Thoracic Fusion in Adolescent Idiopathic Scoliosis with Lenke Type 1C, 3C Or King Type 2 Lumbar Curves of More than 50 Degrees in Magnitude**  
Paper #11  
*Cagatay Ozturk, MD; Azmi Hamzaoglu, MD; Marco G. Teli, MD, FGBOT; Mehmet Tezer, MD; Mehmet Aydogan, MD; Meric Enercan*

9:14 - 9:18 am **5-Year Clinical and Radiographic Results of Selective Thoracic Fusion with Lumbar Curve >40 Degrees**  
Paper #12  
*Paul D. Sponseller, MD; Peter O. Newton, MD; Randal R. Betz, MD; David H. Clements, III, MD; Alvin H. Crawford, MD; Michael F. O'Brien, MD; Michelle C. Marks, PT, MA; Tracey P. Bastrom, MA*

9:18 - 9:22 am **Backfilling of Iliac Crest Defects with Hydroxyapatite-Calcium Triphosphate Biphasic Compound: A Prospective, Randomized, Single-Blind CT and Patient-Based Analysis**  
Paper #13  
*Douglas C. Burton, MD; Barbara Manna, RN; Brandon B. Carlson, BS; Phillip Johnson, MD; Rudolph C. Glattes, MD*

9:22 - 9:34 am Discussion

### Early Onset Scoliosis

9:35 - 9:39 am **Complications in 910 Growing Rod Surgeries: Use of Dual Rods and Submuscular Placement of Rods Decreases Complications**  
Paper #14  
*R. Shay Bess, MD; Behrooz A. Akbarnia, MD; George H. Thompson, MD; Paul D. Sponseller, MD; David L. Skaggs, MD; Suken A. Shah, MD; Hazem B. Elsebaie, FRCS, MD; Oheneba Boachie-Adjei, MD; Lawrence I. Karlin, MD; Sarah K. Canale, BS; Connie Poe-Kochert, RN, BSN, CNP; Growing Spine Study Group*

9:39 - 9:43 am **Neurologic Risk in Growing Rod Surgery in Children: Is Neuromonitoring Necessary in All Cases?**  
Paper #15  
*David L. Skaggs, MD; John B. Emans, MD; David S. Marks, FRCS; John P. Dormans, MD; George H. Thompson, MD; Suken A. Shah, MD; Paul D. Sponseller, MD; Behrooz A. Akbarnia, MD; Growing Spine Study Group*

9:43 - 9:49 am Discussion

9:50 - 9:54 am **Is Definitive Spinal Fusion, or VEPTR Removal, Needed after VEPTR Expansions are Over? An Analysis of the 39 "VEPTR Graduates"**  
Paper #16  
*Jack M. Flynn, MD; Tricia St. Hilaire, BS; John B. Emans, MD; Randal R. Betz, MD; Robert M. Campbell, Jr., MD; Danielle Cameron, BA; Chest Wall and Spine Deformity Study Group*

9:54 - 9:58 am **Vertebral Body Stapling: A Treatment Option for the Growing Child with Scoliosis**  
Paper #17  
*Randal R. Betz, MD; Ashish Ranade, MD; Amer F. Samdani, MD; Ross Chafetz, DPT, MPH; Linda P. D'Andrea, MD; Mr. John P. Gaughan; JahanGir Asghar, MD; Mr. Harsh Grewal; Mary Jane Mulcahey*

9:58 - 10:02 am **Clinical Significance of a Corrective Cast/Brace in the Era of Non-Fusion Surgery (Treatment for Early Onset Scoliosis with a Corrective Cast)**  
Paper #18  
*Tsuji Taichi, MD; Noriaki Kawakami, MD; Kazuyoshi Miyasaka, MD; Tetsuya Ohara, MD; Ayato Nohara, MD*

10:02 - 10:11 am Discussion

10:11 - 10:31 am Break



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## Thursday, September 11, 2008 (continued)

### SESSION II

**Moderators:** Sigurd H. Berven, MD  
Khaled Kebaish, MD

### Adult Spinal Deformity

10:32 - 10:36 am  
Paper #19  
**Revision Rates Following Primary Adult Spinal Deformity Surgery: 667 Consecutive Patients Followed Up to 21 Years Postoperatively**  
*Mark Pichelmann, MD; Lawrence G. Lenke, MD; Christopher R. Good, MD; Patrick T. O'Leary, MD; Keith H. Bridwell, MD; Brenda A. Sides, MA*

10:36 - 10:40 am  
Paper #20  
**Survivorship of Primary Fusion for Adult Spinal Deformity: Rate, Reason, and Time of Reoperation**  
*James M. Mok, MD; Jordan M. Cloyd; David S. Bradford, MD; Serena S. Hu, MD; Vedat Deviren, MD; Jason Smith, MD; Sigurd H. Berven, MD*

10:40 - 10:44 am  
Paper #21  
**Selection of Proximal Fusion Level for Degenerative Lumbar Scoliosis**  
*Kyu-Jung Cho, MD; Se-Il Suk, MD; Kee-Yong Ha, MD; Rack-Yong Chung, MD; Man-Hee Won, MD; Hyung-suk Kim, MD*

10:44 - 10:53 am  
Discussion

10:54 - 10:58 am  
Paper #22  
**Comparative Analysis of Two Hybrid Instrumentation Techniques for Adult Lumbar Scoliosis from the Thoracolumbar Spine to L5 or S1**  
*Yongjung J. Kim, MD; Oheneba Boachie-Adjei, MD; Keith H. Bridwell, MD; Lawrence G. Lenke, MD; Youngbae B. Kim, MD; Thomas W. Lawhorne, MD*

10:58 - 11:02 am  
Paper #23  
**Etiology and Revision Surgical Strategies in Failed Lumbosacral Fixation of Adult Spinal Deformity Constructs**  
*Katsumi Harimaya, MD; Lawrence G. Lenke, MD; Keith H. Bridwell, MD; Takuya Mishiro, PhD, MD; Linda Koester; Brenda A. Sides, MA*

11:02 - 11:06 am  
Paper #24

**Distal Anchor Selection for Adult Spinal Deformity (S1 vsS2/Ileum): The Effect on Sagittal Alignment and Outcomes**

*Charles C. Edwards, II, MD; Keith H. Bridwell, MD; Michael Shainline, MS; Frank Schwab, MD; Sigurd H. Berven, MD; Christopher I. Shaffrey, MD; Steven D. Glassman, MD; Christopher L. Hamill, MD; Stephen L. Ondra, MD*

11:06 - 11:15 am  
Discussion

11:16 - 11:20 am  
Paper #25

**Extension of Fusion to Sacrum in Patients who had Previous Thoracolumbar Fusions to L5: Is it Simple or Complex Surgery?**

*Murat Pekmezci, MD; Vedat Deviren, MD; Sigurd H. Berven, MD; David S. Bradford, MD; Serena S. Hu, MD*

11:20 - 11:24 am  
Paper #26

**A Matched Cohort Study of Long Adult Spinal Deformity Surgery to the Sacrum/Ilium Using rhBMP-2 versus Autogenous Iliac Crest Bone Graft**

*Takeshi Maeda, MD; Jacob M. Buchowski, MD, MS; Keith H. Bridwell, MD; Linda Koester*

11:24 - 11:30 am  
Discussion

11:31 - 11:35 am  
Paper #27

**Operative versus Non-Operative Treatment of Leg Pain in Adults with Scoliosis: A Retrospective Review of a Prospective Multicenter Database with Two-Year Follow-Up**

*Justin S. Smith, MD, PhD; Christopher I. Shaffrey, MD; Sigurd H. Berven, MD; Steven D. Glassman, MD; Christopher L. Hamill, MD; William C. Horton, III, MD; Stephen L. Ondra, MD; Frank Schwab, MD; Kai-Ming Fu, MD, PhD; Keith H. Bridwell, MD*



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## Thursday, September 11, 2008 (continued)

11:35 - 11:39 am  
Paper #28 **Surgical Outcomes of Decompression, Decompression with Limited Fusion and Decompression with Full Curve Fusion for Degenerative Scoliosis with Radiculopathy**  
*Raymond Topp, MD; Ensor E. Transfeldt, MD; Amir A. Mehbod, MD; Robert B. Winter, MD*

11:39 - 11:45 am Discussion

11:45 - 11:50 am Harrington Lecture Introduction

11:51 am - 12:11 pm Harrington Lecture

## Friday, September 12, 2008

7:55 - 8:00 am Announcements

### Session III

**Moderators:** Serena S. Hu, MD  
Noriaki Kawakami, MD

### Spondylolisthesis

8:00 - 8:04 am  
Paper #29 **Effects of Early Correction in High-Grade Developmental Spondylolisthesis L5/S1 on Sagittal Profile and Clinical Outcome**  
*Michael Ruf, MD; Rubens Jensen, MD; Prof. Harry R. Merk; Torsten Eichhorn, MD; Prof. Jürgen Harms, MD*

8:04 - 8:08 am  
Paper #30 **Sagittal Spino-Pelvic Alignment in Developmental Spondylolisthesis and its Potential Relevance for Reduction**  
*Jean-Marc Mac-Thiong, MD, PhD; Zhi Wang, MD; Jacques A. de Guise, PhD; Hubert Labelle, MD*

8:08 - 8:12 am  
Paper #31 **Radiological Assessment of L4-L5 Segment and Sacral Position after Surgical Reduction of L5-S1 Severe Spondylolisthesis and Spondyloptosis Throughout a Single Posterior Approach**  
*Jesus Burgos, MD; Prof. Carlos Barrios; Ignasi Sampera, MD; Eduardo Hevia, MD; Pedro Domenech, MD; Pedro R. Gutierrez, MD, PhD; Gabriel Piza, MD; Oscar G. Riquelme-García, MD, PhD; Ignacio Alvarez, MD; José I. Maruenda, MD; Enrique Recarte, MD*

8:12 - 8:16 am  
Paper #32 **The Relationship between Pelvic Balance and a Dome-Shaped Sacrum in L5-S1 Developmental Spondylolisthesis**  
*Pierre Roussouly, MD; Hubert Labelle, MD; Eric Berthonnaud, PhD; Serena S. Hu, MD; Courtney W. Brown, MD*

8:16 - 8:28 am Discussion

### Cervical Reconstruction

8:29 - 8:33 am  
Paper #33 **Stand-Alone Anterior Reconstruction in Cervical Kyphosis: A Prospective Analysis**  
*Mihir R. Bapat, MS; Nanjundappa S. Harshavardhana, MS(Orth), Dip. SICOT; Kshitij S. Chaudhary, MS, DNB; Umesh S. Metkar, MS; Satyajit V. Marawar, MD; Prof. Vinod J. Laheri*

8:33 - 8:37 am  
Paper #34 **Circumferential Correction of Cervical Kyphosis Results in Improved Outcomes**  
*Sanjay S. Dhall, MD; Regis W. Haid, MD; Praveen V. Mummaneni, MD*

8:37 - 8:43 am Discussion

### Tumors

8:44 - 8:48 am  
Paper #35 **Involvement of the Spine in Patients with Multiple Hereditary Exostosis (MHE)**  
*James W. Roach, MD; Joshua B. Klatt, MD; Nathan D. Faulkner, MS*

8:48 - 8:52 am  
Paper #36 **Posterior Stabilization Following Oncologic Resection of the Cervicothoracic Junction: A Review of 90 Consecutive Cases**  
*Peter S. Rose, MD; Ilya Laufer, MD; Jasmine Beria, MPH; Andrew R. Hanover, BA; Mark Bilsky, MD; Patrick Boland, MD*

8:52 - 8:56 am  
Paper #37 **Long Term Clinical Outcomes Following Attempted en bloc Resections for Malignant Primary Sacral Tumors**  
*Patrick C. Hsieh, MD; Daniel M. Sciubba, MD; Risheng Xu, BS; Matthew Mcgirt, MD; Clarke Nelson, BS; Jean-Paul Wolinsky, MD; Ziya L. Gokaslan, MD*

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## Friday, September 12, 2008 (continued)

- 8:56 - 9:00 am **Risk Factors for Vertebral Fracture Following Single Fraction Intensity Modulated Radiation Therapy for Spinal Metastases**  
Paper #38 *Peter S. Rose, MD; Ilya Laufer, MD; Andrew R. Hanover, BA; Eric Lis, MD; Yoshiya Yamada, MD; Mark Bilsky, MD; Patrick Boland, MD*
- 9:00 - 9:12 am Discussion
- Neuromuscular Scoliosis**
- 9:13 - 9:17 am **5-Year Radiographic Results of Long Scoliosis Fusion in Juvenile Spinal Muscular Atrophy Patients: Crankshaft and Ultimate Correction**  
Paper #39 *Lukas P. Zebala, MD; Keith H. Bridwell, MD; Christine Baldus, RN, MHS; B. Stephens Richards, III, MD; John P. Dormans, MD; Lawrence G. Lenke, MD; Joshua D. Auerbach, MD*
- 9:17 - 9:21 am **Spinal Fusion for Spastic Neuromuscular Scoliosis (NMS): Is Anterior Releasing Necessary When Intraoperative Halo-Femoral Traction is Used**  
Paper #40 *Kathryn A. Keeler, MD; Scott J. Luhmann, MD; Lawrence G. Lenke, MD; Christopher R. Good, MD; Brenda A. Sides, MA; Mario Shootman, PhD; Keith H. Bridwell, MD*
- 9:21 - 9:25 am **30 Years of Experience with Infections in Pediatric Neuromuscular Spinal Deformity Surgery**  
Paper #41 *Patrick J. Cahill, MD; Drew E. Warnick, MD; Michael J. Lee, MD; Lawrence C. Vogel, MD; Kim W. Hammerberg, MD; Peter F. Sturm, MD*
- 9:25 - 9:34 am Discussion
- 9:35 - 9:39 am **Progression of Scoliosis in Non-Ambulatory Duchenne Muscular Dystrophy Patients**  
Paper #42 *Frederic Shapiro, MD; David Zurakowski, PhD; Basil T. Darras, MD*
- 9:39 - 9:43 am **Spinal Deformity Correction in Duchenne Muscular Dystrophy: Sublaminar Wiring Fixation Versus Pedicle Screw Instrumentation**  
Paper #43 *Ujjwal K. Debnath, FRCS, FRCS; Hossein Mehdian, FRCS, MD; Harshad Dabke, FRCS; A.S. Hoakazemi; Nanjundappa S. Harshavardhana, MS(Orth), Dip. SICOT; Brian J. Freeman, MD; John K. Webb, MBBS, FRCS*
- 9:43 - 9:49 am Discussion
- Lumbar Deformity**
- 9:50 - 9:54 am **Spondylolysis Repair with Rigid Fixation: A Prospective Clinical and Radiographic Outcome Study**  
Paper #44 *Matthew Hepler, MD; Matthew Walker; Eugene P. Lautenschlager, PhD*
- 9:54 - 9:58 am **Dynamic Stabilization and Laminectomy in Degenerative Lumbar Scoliosis of Elderly Patients**  
Paper #45 *Mario Di Silvestre, MD; Georgios Bakaloudis, MD; Francesco Lolli, MD; Patrizio Parisini, MD*
- 9:58 - 10:02 am **TLIF vs ALIF as an Adjunct to Posterior Instrumented Correction of Degenerative Lumbar Scoliosis: 3 Year Clinical and Radiographic Outcomes**  
Paper #46 *Dennis Crandall, MD; Jan Revella, RN*
- 10:02 - 10:11 am Discussion
- 10:11 - 10:31 am Break
- SESSION IV**  
**Moderators:** Bernard A. Rawlins, MD  
B. Stephens Richards, III, MD
- Innovative Methods**
- 10:32 - 10:36 am **Use of Vertebroplasty to Prevent Proximal Junctional Kyphosis in Adult Spinal Deformity Surgery: A Biomechanical Cadaveric Study**  
Paper #47 *Ivan E. LaMotta, MD; Gabor Voros, MD; Joseph R. O'Brien, MD; Stephen Belkoff, MD; Khaled Kebaish, MD*



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## Friday, September 12, 2008 (continued)

10:36 - 10:40 am  
Paper #48  
**Preoperative Inferior Vena Cava Filters for Major Spinal Reconstruction in Adults**  
*Timothy Kuklo, MD, JD; Michael Rosner, MD; Stephen L. Ondra, MD; Brian A. O'Shaughnessy, MD; Jamal McClendon, MD*

10:40 - 10:44 am  
Paper #49  
**CT and Biomechanical Evaluation of Screw Fixation Options at the Cervicothoracic Junction: Intralaminar vs. Intrapedicular Techniques**  
*Mario J. Cardoso, MD, DC; Anton E. Dmitriev, MSc; Ronald A. Lehman, MD; Melvin D. Helgerson, MD; Patrick B. Cooper, MD; Michael Rosner, MD*

10:44 - 10:53 am Discussion

### Other

10:54 - 10:58 am  
Paper #50  
**Treatment of Spinal Deformities in Patients with Diastrophic Dysplasia (DD) - A Long-Term, Retrospective, Nationwide Study**  
*Tuomas Jalanko, MS; Ville Remes, MD, PhD; Jari Peltonen, MD; Asst. Prof. Mikko S. Poussa; Ilkka Helenius, MD*

10:58 - 11:02 am  
Paper #51  
**Scoliosis and the Effects of Growth Hormone Treatment in Children with Prader-Willi Syndrome**  
*Roderick F. de Lind van Wijngaarden, MSc; Luuk W. de Klerk, MD, PhD; Dederieke A. Festen, MD, PhD; Barto J. Otten, MD, PhD; Anita C. Hokken-Koelega, MD, PhD*

11:02 - 11:06 am  
Paper #52  
**Lumbar Plexus Nerve Root Position within the Psoas Muscle: An Anatomic Study**  
*Carl Paulino, MD; Nael Shanti, MD; Martin Quirno, MD; Jeffrey M. Spivak, MD*

11:06 - 11:15 am Discussion

### Adult Spinal Deformity

11:16 - 11:20 am  
Paper #53  
**Does Treatment (Nonoperative and Operative) Help Patients with Adult Symptomatic Lumbar Scoliosis: A Prospective Multicenter Evidence-Based Medicine Study**  
*Lukas P. Zebala, MD; Keith H. Bridwell, MD; Steven D. Glassman, MD; William C. Horton, III, MD; Christopher I. Shaffrey, MD; Frank Schwab, MD; Joan F. Hilton, ScD; Michael Shainline, MS; Christine Baldus, RN, MHS; David Wootten, PhD*

11:20 - 11:24 am  
Paper #54  
**Functional Outcomes and Complications Following Primary Spinal Surgery for Scoliosis in Adults Age 40 Years and Older: A Prospective Study with a Minimum 2-Year Follow-Up**  
*Ryan M. Zimmerman, BS; Khaled Kebaish, MD; Ahmed S. Mohamed, MBBCh, MsC Ortho; Richard Skolasky, ScD; Malaya Robinson, RN, BSN, RNFA*

11:24 - 11:28 am  
Paper #55  
**Pedicle Subtraction versus Smith-Petersen Osteotomies for Correction of Fixed Sagittal Plane Deformities: Clinical and Radiographic Outcomes in 151 Patients**  
*Brian Hsu, MB, BS, FRACS; Amir A. Mehdod, MD; Prof. Serkan Erkan; Ensor E. Transfeldt, MD; Joseph H. Perra, MD; Francis Denis, MD; Timothy Garvey, MD; Manuel R. Pinto, MD; James D. Schwender, MD; Daryll C. Dykes, MD, PhD; John E. Lonstein, MD; Robert B. Winter, MD*

11:28 - 11:37 am Discussion

11:38 - 11:41 am 2009 IMAST Preview

11:42 - 11:45 am 2009 Annual Meeting Preview

11:46 - 11:49 am Worldwide Regional Meeting Preview

11:50 - 11:55 am Introduction of President

11:56 am - 12:16 pm Presidential Address

12:16 - 1:20 pm Lunch

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### Friday, September 12, 2008 (continued)

#### SESSION V

**Moderators:** Ian A. Stokes, PhD  
Jack M. Flynn, MD

#### Trauma/Adult Deformity

- 1:20 - 1:24 pm **Early Complications of Methylprednisolone Sodium Succinate (MPSS) in the Treatment of Acute Cervical Spinal Cord Injury**  
Paper #56  
*Yasuo Ito, MD, PhD; Y. Sugimoto, MD*
- 1:24 - 1:28 **Inflammatory Cytokine Expression and the Development of Injury-Severity Biomarkers after Human Spinal Cord Injury**  
Paper #57  
*Anthea M. Stammers, MSc; Lise Belanger, RN, BSN, MSN; Donna Chan, RN; Arlene Bernardo, RN; Hamed Umedaly, MD; Wolfram Tetzlaff, MD, PhD; Mitch Giffin, MD; Scott C. Paquette, MD; Michael C. Boyd, MD, MSc; John Street, MD; Charles Fisher, BSc, MHSc, MD, FRCSC; Marcel F. Dvorak, MD; Brian K. Kwon, MD, PhD*
- 1:28 - 1:32 pm **Magnesium in a Polyethylene Glycol Formulation Provides Neuroprotection after Acute Spinal Cord Injury**  
Paper #58  
*Brian K. Kwon, MD, PhD; Josee Roy, PhD; Jae H. Lee, BSc; Jie Liu, MD; Anthea M. Stammers, MSc; Jeffrey Marx, PhD*
- 1:32 - 1:41 pm Discussion
- 1:42 - 1:46 pm **Increasing Lumbar Lordosis of Adult Spinal Deformity Patients via Intraoperative Prone Positioning**  
Paper #59  
*Katsumi Harimaya, MD; Takuya Mishiro, PhD, MD; Lawrence G. Lenke, MD; Keith H. Bridwell, MD; Ms. Linda Koester; Brenda A. Sides, MA*
- 1:46 - 1:50 pm **A New Way of Assessing Sagittal Balance: A Radiologic Study of 232 Asymptomatic Individuals**  
Paper #60  
*Sebastien Charosky, MD; Ian J. Harding, BA, FRCS (Orth); Raphael Vielle, MD, PhD; Eric Berthonnaud, PhD; Pierre Roussouly, MD; Daniel Chopin, MD*

- 1:50 - 1:54 pm **Long Term Clinico-Radiological Outcomes after Surgical Treatment of Scheuermann's Kyphosis (SK): A UK Experience of 35 Cases with an Average Follow-Up of 9 Years**  
Paper #61  
*Nanjundappa S. Harshavardhana, MS(Orth), Dip. SICOT; Hossein Mehdian FRCS, MD; Harshad Dabke, FRCS; Ujjwal K. Debnath, FRCS; John K. Webb, MBBS, FRCS*
- 1:54 - 2:03 pm Discussion
- 2:04 - 2:08 pm **Increasing Pain and Disability, Rather Than Deformity, Determine Treatment Modality for Older Patients with Adult Scoliosis**  
Paper #62  
*Oheneba Boachie-Adjei, MD; R. Shay Bess, MD; Matthew E. Cunningham, MSc; Douglas C. Burton, MD; Christopher I. Shaffrey, MD; Alexis P. Shelokov, MD; Richard A. Hostin, MD; Frank Schwab, MD; Kirkham Wood, MD; Munish C. Gupta, MD; Behrooz A. Akbarnia, MD, International Spine Study Group*
- 2:08 - 2:12 pm **Clinical Instinct versus Standardized Questionnaire: The Spinal Surgeons Ability to Detect Psychological Distress**  
Paper #63  
*Michael D. Daubs, MD; Alpesh Patel, MD; Darrel S. Brodke, MD*
- 2:12 - 2:18 pm Discussion
- 2:19 - 2:23 pm **RT-PCR and Microarray Experimental Study for the Impact of Methylprednisolone and Sodium Channel Blocker on Axonal Growth after Acute Spinal Cord Injury in Rats**  
Paper #64  
*Jun-Young Yang, MD, PhD; Prof. June Kyu Lee; Ho sup Song, MD; Eui Pyo Hong, MD*
- 2:23 - 2:27 pm **Transplantation of Human Marrow Stromal Cells and Mono-Nuclear Bone Marrow Cells into the Injured Spinal Cord: A Comparative Study**  
Paper #65  
*Amer F. Samdani, MD; Courtney Paul, BS; Birgit Neuhuber, PhD; Randal R. Betz, MD; Itzhak Fischer, PhD*
- 2:27 - 2:33 pm Discussion



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## Friday, September 12, 2008 (continued)

### Basic Science

- 2:34 - 2:38 pm **VEPTR Improves Pulmonary Hypoplasia in a Postnatal Rabbit Model of Thoracic Insufficiency Syndrome**  
Paper #66  
*Hemal P. Mehta, MSc; Brian D. Snyder, MD, PhD; Stephen R. Baldassarri, BA; Melissa J. Hayward, MD; Michael J. Giuffrida, MD; Supriya P. Bansal, BS; Vahid Entezari, MD; Nipun D. Patel, MS; Andrew C. Jackson, PhD*
- 2:38 - 2:42 pm **Transient Short Term Local Bone Remodeling Effects of High-Doses of rhBMP-2 in a Novel Preclinical Interbody Spine Fusion Model**  
Paper #67  
*Hyun Bae, MD; Ben B. Pradhan, MD, MSE; Vikas V. Patel, MA, MD; Jeffrey M. Toth, PhD; Jeffrey M. Badura, MS; Howard B. Seim, DVM; A. Simon Turner, BVSc, MS, Dipl. ACVS*
- 2:42 - 2:46 pm **Porcine Scoliosis Model Based on Animal Growth Created with Minimal Invasive Off-Set Tethering**  
Paper #68  
*Thierry Odent, MD; Thibault Cachon, MV; Bertrand Peultier; José Gournay; Erwan Jolivet; Prof. Eric Viguiet*
- 2:46 - 2:55 pm Discussion
- 2:56 - 3:00 pm **The Effect of Calmodulin Antagonists on the Incidence and Magnitude of Scoliosis in Pinealectomized Chicken and Bipedal C57BL/6 Mice**  
Paper #69  
*Ibrahim Akel, MD; Gokhan H. Demirkiran, MD; Ahmet Alanay, MD; Ralph Marcucio, MD; Emre R. Acaroglu, MD*
- 3:00 - 3:04 pm **Effect of Teriparatide [rhPTH(1,34)] and Calcitonin on Intertransverse Process Fusion in a Rabbit Model**  
Paper #70  
*Ronald A. Lehman Jr., MD; Anton E. Dmitriev, MSc; Mario J. Cardoso, MD, DC; Christen Christensen; Melvin D. Helgeson, MD; Timothy Kuklo, MD, JD; K. Daniel Riew, MD*

- 3:04 - 3:08 pm **Sacral-Pelvic Fixation: A Biomechanical Comparison Between Constructs Ending with S2 Bicortical Bitriangulated (BCBT) Screws and Iliac Screws**  
Paper #71  
*William C. Horton, III, MD; JimHwan Kim, MD, PhD; Takahiko Hamasaki, MD; Brett A. Freedman, MD; William C. Hutton, DSc*

3:08 - 3:17 pm Discussion

3:17 - 3:37 pm Break

### Session VI

- Moderators:** Muharrem Yazici, MD  
Michael F. O'Brien, MD

### Adolescent Idiopathic Scoliosis

- 3:38 - 3:42 pm **Thoracic Pedicle Screw Instrumentation: The Learning Curve in Adolescent Idiopathic Scoliosis**  
Paper #72  
*Baron S. Lonner, MD; Joshua D. Auerbach, MD; Michael B. Estreicher, BA; Kristin E. Kean, BA*

- 3:42 - 3:46 pm **The Majority of Initial Coronal Imbalance Following Fusion Surgery for AIS Improves within Six Months**  
Paper #73  
*JahanGir Asghar, MD; Daniel M. Sciubba, MD; Amer F. Samdani, MD; Patrick J. Cahill, MD; David H. Clements, III, MD; M. Darryl Antonacci, MD, FACS; Randal R. Betz, MD; Harms Study Group*

- 3:46 - 3:50 pm **Significance of Intraoperative Thoracic Kyphosis Increase to Prevent the Proximal Junctional Kyphosis in Adolescent Idiopathic Scoliosis Following Posterior Segmental Spinal Instrumentation and Fusion: A Multicenter Analysis of 518 Cases**  
Paper #74  
*Yongjung J. Kim, MD; Lawrence G. Lenke, MD; Keith H. Bridwell, MD; Oheneba Boachie-Adjei, MD; Naobumi Hosogane, MD; Youngbae B. Kim, MD*

3:50 - 3:59 pm Discussion

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- 4:00 - 4:04 pm **Elevated Plasma Factor P is Involved in AIS Onset and Curve Progression**  
Paper #75  
*Alain Moreau, PhD; Anita Franco, MSc; Bouziane Azeddine, MSc; Pierre H. Rompré, MSc; Isabelle Turgeon, BSc; Keith M. Bagnall, PhD; Benoît Poitras, MD; Hubert Labelle, MD; Charles-Hilaire Rivard, MD; Guy Grimard, MD; Jean Ouellet, MD; Stefan Parent, MD, PhD; Ginette Larouche; Ginette Lacroix*
- 4:04 - 4:08 pm **Pre-Operative CT Does Not Appear to Improve Accuracy of Pedicle Screw Placement and Exposes the Patient to Increased Quantities of Radiation**  
Paper #76  
*John K. Czerwejn, MD; Terry Amaral, MD; Adam L. Wollowick, MD; Alok D. Sharan; Beverly Thornhill, MD; Vishal Sarwahi, MD*
- 4:08 - 4:12 pm **New Parameters to Represent the Position of the Aorta Relative to the Spine for Pedicle Screw Placement**  
Paper #77  
*Katsushi Takeshita, MD; Toru Maruyama, MD; Hirotaka Chikuda, MD; Takashi Ono, MD; Naoki Shoda, MD; Kozo Nakamura, MD*
- 4:12 - 4:21 pm Discussion
- 4:22 - 4:26 pm **Intrathecal Morphine Administration for Preemptive Analgesia in Children Undergoing Posterior Spinal Instrumentation and Fusion for Idiopathic Scoliosis**  
Paper #78  
*Jochen P. Son-Hing, MD, FRCSC; Paul A. Tripi, MD; Jennifer M. Potzman, MD; Connie Poe-Kochert, RN, BSN, CNP; George H. Thompson, MD*
- 4:26 - 4:30 pm **Halo-Gravity Traction in Severe Pediatric Spinal Deformity**  
Paper #79  
*Kristina Walick, MD; Anna McClung, RN; Daniel J. Sucato, MD, MS; Charles E. Johnston, MD*
- 4:30 - 4:34 pm **Is Extended Preoperative Halo Traction Safe and Effective for Severe Pediatric Spinal Deformity? Critical Review of 62 Pediatric Patients**  
Paper #80  
*Timothy Kuklo, MD, JD; Kathryn A. Keeler, MD; Laura A. Meyer, MA; Scott J. Luhmann, MD; Keith H. Bridwell, MD; Lawrence G. Lenke, MD*
- 4:34 - 4:43 pm Discussion
- 4:44 - 4:48 pm **A 13-14 Year Follow Up of Outcome for Fusions in Idiopathic Scoliosis**  
Paper #81  
*Colin Nnadi, FRCS(Orth); Prakash Jayakumar, MRCS; Satoshi Hori BSc, MB BS, MRCS; Adrian Casey; David Harrison, FRCS; Ben Taylor; Dimitri A. Raptis, MRCS*
- 4:48 - 4:52 pm **Fixation Points within the Main Thoracic Curve: Does More Instrumentation Produce Greater Curve Correction?**  
Paper #82  
*James O. Sanders, MD; Mohammad Diab, MD; B. Stephens Richards, III, MD; Lawrence G. Lenke, MD; Charles E. Johnston, MD; John B. Emans, MD; Daniel J. Sucato, MD, MS; Mark A. Erickson, MD; Keith H. Bridwell, MD; Richard E. McCarthy, MD; John F. Sarwark, MD; John P. Dormans, MD; Timothy Kuklo, MD, JD; Michael Shainline, MS; Spinal Deformity Study Group*
- 4:52 - 4:56 pm **'Don't End your Fusion at T12 in Idiopathic Scoliosis': Wisdom or Myth?**  
Paper #83  
*Jack M. Flynn, MD; Tracey P. Bastrom, MA; Peter O. Newton, MD; Lawrence G. Lenke, MD; Alvin H. Crawford, MD; Thomas G. Lowe, MD; Randal R. Betz, MD; David H. Clements, III, MD; Baron S. Lonner, MD; Michelle C. Marks, PT, MA; Harms Study Group*
- 4:56 - 5:05 pm Discussion



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## Saturday, September 13, 2008

7:55 - 8:00 am Announcements

### Session VII

**Moderators:** Lori A. Karol, MD  
David L. Skaggs, MD

### Adolescent Idiopathic Scoliosis

8:00 - 8:04 am **Quality of Life in Adult AIS Patients - Comparison Between Untreated and Brace Treated Patients**  
Paper #84  
*Aina J. Danielsson, MD, PhD; Ralph Hasserius, PhD; Acke Ohlin, MD, PhD; Alf Nachemson, MD, PhD*

8:04 - 8:08 am **The Association between the SRS-22 and Scoliosis Severity Changes at a Clinically Relevant Threshold**  
Paper #85  
*Eric C. Parent, PT, MSc, PhD; Daniel L. Wong; Douglas L. Hill, P.Eng, MBA; James Mahood, MD; Marc Moreau, MD, FRCS(C); Jim Raso, MASC; Edmond Lou, PhD*

8:08 - 8:12 am **Hospital Costs Associated with Surgical Treatment of Adolescent Idiopathic Scoliosis**  
Paper #86  
*Charles T. Mehlman; DO, MPH; Jun Ying, PhD; Cassie L. Kirby, BA*

8:12 - 8:21 am Discussion

8:22 - 8:26 am **Change in Thoracic Sagittal Alignment Following Posterior Instrumentation for Lenke 1A and B Curves**  
Paper #87  
*James O. Sanders, MD; John P. Dormans, MD; Timothy Kuklo, MD, JD; Lawrence G. Lenke, MD; B. Stephens Richards, III, MD; Charles E. Johnston, MD; Daniel J. Sucato, MD, MS; John B. Emans, MD; Mohammad Diab, MD; Michael Shainline, MS; Spinal Deformity Study Group*

8:26 - 8:30 am **Preservation of Thoracic Kyphosis: A Critical Component to Maintaining Post-Operative Lumbar Lordosis during the Surgical Treatment of Adolescent Idiopathic Scoliosis**  
Paper #88  
*Vidyadhar V. Upasani, MD; Peter O. Newton, MD; Jeff B. Pawelek, BS; Tracey P. Bastrom, MA; Lawrence G. Lenke, MD; Thomas G. Lowe, MD; Alvin H. Crawford, MD; Randal R. Betz, MD; Baron S. Lonner, MD; Harms Study Group*

8:30 - 8:34 am **3D Sub-Classification of Lenke 1 Curves**  
Paper #89  
*Archana P. Sangole, PhD; Carl-Éric Aubin, PhD, P.Eng; Hubert Labelle, MD; Lawrence G. Lenke, MD; Ian A. Stokes, PhD; Peter O. Newton, MD; Roger P. Jackson, MD*

8:34 - 8:43 am Discussion

8:44 - 8:48 am **Treatment Outcome and Patient's Acceptance of the SpineCor vs Rigid Bracing System for AIS Girls - A Randomized Controlled Trial with Follow Up Till Skeletal Maturity**  
Paper #90  
*Tsz-ping Lam; MB, BS; Man-sang Wong, PhD; Bobby Kin-wah Ng, MD; Sai-wing Sin; Hoi-kei Rachel Kwok; Lai-fong Sandra Shum; Prof. Daniel Hung-kay Chow; Jack Chun Yiu Cheng, MD*

8:48 - 8:52 am **Relative Contributions of Discal and Vertebral Wedging to Cobb Angle Progression During the Adolescent Growth Spurt**  
Paper #91  
*Ryan Will, MD; Ian A. Stokes, PhD; Xing Qiu, MD; Matthew Walker; James O. Sanders, MD*

8:52 - 8:56 am **Post Operative Trunk Flexibility Loss is Modest but Incremental as the Fusion Progresses Distally**  
Paper #92  
*Peter O. Newton, MD; Michelle C. Marks, PT, MA; Tracey P. Bastrom, MA; Randal R. Betz, MD; David H. Clements, III, MD; Baron S. Lonner, MD; Alvin H. Crawford, MD; Lynn Lethko, MD; Harry L. Shufflebarger, MD; Michael F. O'Brien, MD*

8:56 - 9:05 am Discussion

9:06 - 9:10 am **Postoperative Left Shoulder Elevation (LSE): An Unexpected Consequence of Surgical Correction of Lenke 1 Main Thoracic Curves**  
Paper #93  
*Michael F. O'Brien, MD; Harry L. Shufflebarger, MD; Angel Macagno, MD; Michelle C. Marks, PT, MA; Tracey P. Bastrom, MA; Randal R. Betz, MD; Peter O. Newton, MD; Baron S. Lonner, MD; Alvin H. Crawford, MD; Suken A. Shah, MD; Harms Study Group*

9:10 - 9:14 am **Surgeon Reliability for Assessing Shoulder Height in AIS Patients with Double Thoracic Curves**  
Paper #94  
*Bryan Tompkins, MD; Daniel J. Sucato, MD, MS; Anna McClung, RN*

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- |   |  |                                |   |
|---|--|--------------------------------|---|
| 9:14 - 9:18 am<br>Paper #95               | <b>Impact of Idiopathic Scoliosis and its Surgical Treatment on Appearance in Children.</b><br><i>Mohammad Diab, MD; Timothy Kuklo, MD, JD; James O. Sanders, MD; Lawrence G. Lenke, MD; Daniel J. Sucato, MD, MS</i>  | 10:40 - 10:44 am<br>Paper #99  | <b>Efficacy of Intraoperative Cell Salvage Machines in Pediatric Spinal Deformity Surgery</b><br><i>Richard E. Bowen, MD; Stephen Gardner, BS; Anthony A. Scaduto, MD; Michael J. Eagan, MD; Jason Beckstead, MD</i>  |
| 9:18 - 9:27 am                            | Discussion   | 10:44 - 10:56 am               | Discussion  |
| 9:28 - 9:32 am                            | Transfer of Presidency   | 10:57 - 11:01 am<br>Paper #100 | <b>Prevention of Surgical Site Infection Following Spinal Instrumentation Surgery: Is Postoperative Antimicrobial Prophylaxis Indispensable?</b><br><i>Hiroshi Taneichi, MD; Kota Suda, MD; Tomomichi Kajino, MD; Hiroshi Moridaira, MD; Yutaka Nohara, MD</i>  |
| 9:32 - 10:07 am                           | Awards Presentation<br>Russell A. Hibbs Awards<br>Louis A. Goldstein Award<br>John H. Moe Award<br>Walter P. Blount Humanitarian Award<br>Lifetime Achievement Award   | 11:01 - 11:05 am<br>Paper #101 | <b>Major Perioperative Neurologic Deficits in Pediatric and Adult Spine Surgery Patients: Incidence, Etiology and Outcomes over a Fourteen Year Period at One Institution</b><br><i>Christopher R. Good, MD; Keith H. Bridwell, MD; Patrick T. O'Leary, MD; Mark Pichelmann, MD; Lawrence G. Lenke, MD; K. Daniel Riew, MD; Scott J. Luhmann, MD; Timothy Kuklo, MD, JD; Jacob M. Buchowski, MD, MS; Jennifer Flynn, BS</i> |
| 10:07 - 10:27 am                          | Break  | 11:05 - 11:11 am               | Discussion  |
| <b>Session VIII</b><br><b>Moderators:</b> | Behrooz A. Akbarnia, MD<br>Steven M. Mardjetko, MD, FAAP   | <b>Adult Spinal Deformity</b>  |   |
| <b>Complications</b>                      | <b>Is Hypotensive Anesthesia Effective at Reducing Blood Loss During Pediatric Spine Fusion?</b><br><i>Richard E. Bowen, MD; Stephen Gardner, BS; Anthony A. Scaduto, MD; Michael J. Eagan, MD; Jason Beckstead, MD</i>  | 11:12 - 11:16 am<br>Paper #102 | <b>What Radiographic Sagittal Parameters Correlate with Improved SRS Self-Image Scores Postoperatively in Patients with Sagittal Imbalance: An Analysis of 102 Lumbar Pedicle Subtraction Osteotomy Patients</b><br><i>Yongjung J. Kim, MD; Keith H. Bridwell, MD; Lawrence G. Lenke, MD; Oheneba Boachie-Adjei, MD; Youngbae B. Kim, MD; Jacob M. Buchowski, MD, MS</i>  |
| 10:28 - 10:32 am<br>Paper #96             | <b>Can We Safely Reduce Blood Loss during Lumbar Pedicle Subtraction Osteotomy Procedures using Tranexamic Acid or Aprotinin? A Comparative Study with Controls</b><br><i>Christine Baldus, RN, MHS; Keith H. Bridwell, MD; Gbolahan O. Okubadejo, MD; Lawrence G. Lenke, MD</i>   |                                |   |
| 10:32 - 10:36 am<br>Paper #97             | <b>Epsilon Aminocaproic Acid (EACA) Reduces Postoperative Red-Cell Transfusion Requirements in Patients Undergoing Major Spinal Surgery: A Prospective, Randomized, Placebo-Controlled Trial in 182 Patients</b><br><i>Sean Berenholtz, MD, MHS, FCCM; Khaled Kebaish, MD; Julius Pham, MD; Elizabeth Garrett-Mayer, PhD; David B. Cohen, MD; John Kostuik, MD; Peter J. Pronovost, MD, PhD, FCCM; Todd Dorman, MD</i> |                                |   |
| 10:36 - 10:40 am<br>Paper #98             |  |                                |   |



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- 11:16 - 11:20 am Paper #103 **Does Vertebral Level of Pedicle Subtraction Osteotomy Correlate with Degree of Spino-Pelvic Parameter Correction?**  
*Frank Schwab, MD; Virginie Lafage, PhD; Ashish Patel, MD; Robert A. Hart, MD; Douglas C. Burton, MD; Oheneba Boachie-Adjei, MD; Alexis P. Shelokov, MD; Richard A. Hostin, MD; Christopher I. Shaffrey, MD; Munish C. Gupta, MD; Behrooz A. Akbarnia, MD; R. Shay Bess, MD*
- 11:20 - 11:24 am Paper #104 **Sagittal Spinopelvic Alignment Change after Lumbar Pedicle Subtraction Osteotomy: A Multicenter Analysis of 113 Patients with a Minimum 2 Years Follow-Up**  
*Yongjung J. Kim, MD; Keith H. Bridwell, MD; Lawrence G. Lenke, MD; Oheneba Boachie-Adjei, MD; Christopher L. Hamill, MD; Youngbae B. Kim, MD*
- 11:24 - 11:33 am Discussion
- 11:34 - 11:38 am Paper #105 **Normative SRS-QOL Data to Allow Age and Gender Specific Comparisons to Adult Deformity Patients: An Analysis of 1346 Unaffected Subjects**  
*Christine Baldus, RN, MHS; Keith H. Bridwell, MD; John Harrast; Christopher I. Shaffrey, MD; Stephen L. Ondra, MD; Lawrence G. Lenke, MD; Frank Schwab, MD; Steven M. Mardjetko, MD, FAAP; Steven D. Glassman, MD; Charles C. Edwards, II, MD; Christopher J. DeWald, MD; Thomas G. Lowe, MD; William C. Horton, III, MD; David W. Polly, Jr., MD*
- 11:38 - 11:42 am Paper #106 **Do One Year Outcomes Predict Two Year Outcomes in Adult Deformity Surgery?**  
*Steven D. Glassman, MD; Frank Schwab, MD; Keith H. Bridwell, MD; Christopher I. Shaffrey, MD; William C. Horton, III, MD; Serena S. Hu, MD*
- 11:42 - 11:46 am Paper #107 **Operative vs. Non-Operative Outcomes: Adult Scoliosis Patients Age over 65 at Two Year Follow-Up**  
*Gang Li, MD; Eric Fu, BA; Peter G. Passias, MD; Guoan Li, PhD; Kirkham Wood, MD*
- 11:46 - 11:55 am Discussion
- 11:56 am - 12:00 pm Paper #108 **The Changing Practice of Adult Spinal Deformity Surgery: An Emerging New Paradigm for Surgical Approach; Staged Procedures and Fusion Levels**  
*Charles C. Edwards, II, MD; Keith H. Bridwell, MD; Michael Shainline, MS; Sigurd H. Berven, MD; Stephen L. Ondra, MD; William C. Horton, III, MD; Steven D. Glassman, MD; Christopher I. Shaffrey, MD; Christopher L. Hamill, MD; Frank Schwab, MD*
- 12:00 - 12:04 pm Paper #109 **Can Posterior Only Surgery Replace Combined Anterior (Thoracotomy/Thoracoabdominal)/Posterior Approaches for Adult Scoliosis?**  
*Christopher R. Good, MD; Lawrence G. Lenke, MD; Patrick T. O'Leary, MD; Mark Pichelmann, MD; Kathryn A. Keeler, MD; Keith H. Bridwell, MD; Christine Baldus, RN, MHS; Linda Koester*
- 12:04 - 12:08 pm Paper #110 **Does Correction of Preoperative Coronal Imbalance Make a Difference in Outcomes of Adult Deformity Patients?**  
*Michael D. Daubs, MD; Lawrence G. Lenke, MD; Yongjung J. Kim, MD; Gene Cheh, MD; Keith H. Bridwell, MD*
- 12:08 - 12:17 pm Discussion





































