Elegantly simple. Level 1 data. The 1st comparative effectiveness study in spinal stenosis.

Visit the Paradigm Spine booth today

www.paradigmspine.com
<table>
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<tr>
<th>Time</th>
<th>Monday May 13</th>
<th>Tuesday May 14</th>
<th>Wednesday May 15</th>
<th>Thursday May 16</th>
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<tr>
<td>08.00</td>
<td>Membership Committee Meeting</td>
<td>06.30 Breakfast</td>
<td>06.30 Breakfast</td>
<td>06.30 Breakfast</td>
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<tr>
<td>09.30</td>
<td>Strategy Group Meeting</td>
<td>07.45 Welcome</td>
<td>07.45-08.45 Special Poster Session I</td>
<td>07.30-09.00 Complications</td>
<td>07.45-08.45 Special Poster Session II</td>
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<tr>
<td>12.00</td>
<td>ExCom Meeting</td>
<td>08.00-09.30 Low Back Pain</td>
<td>09.00-10.00 Epidemiology/Statistics</td>
<td>09.00-10.00 General Poster Sessions</td>
<td>09.00-10.00 Osteoporotic Vertebral Compression Fracture</td>
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<tr>
<td>15.00</td>
<td>Registration Opens</td>
<td>09.30-10.00 COFFEE</td>
<td>10.00-10.30 COFFEE</td>
<td>10.00-10.30 COFFEE</td>
<td>10.00-10.30 COFFEE</td>
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<tr>
<td>18.00</td>
<td>Welcome Reception</td>
<td>10.00-11.30 Disc Degeneration</td>
<td>10.30-11.00 Invited Lecture #2</td>
<td>10.30-11.00 Fellowship Ceremony</td>
<td>10.30-11.00 Invited Lecture #3</td>
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<td>11.30-13.00 LUNCH</td>
<td>11.00-11.40 Harry Farfan Presidential Lecture</td>
<td>11.00-11.50 The ISSLS Prize</td>
<td>11.00-12.00 Lumbar Spinal Stenosis</td>
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<td>13.00-14.00 Biology</td>
<td>11.40-12.20 Presidential Address</td>
<td>11.50-13.10 LUNCH</td>
<td>12.00-12.20 Announcement – Best Paper and Poster Awards</td>
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<td>14.00-15.00 Biomechanics</td>
<td>13.00-18.00 Afternoon Outing</td>
<td>13.10-14.20 Surgery</td>
<td>Closing Remarks, Meeting Adjourned</td>
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<td>15.00-15.30 COFFEE</td>
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<td>14.20-15.20 Psychosocial</td>
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<td>15.30-16.00 Invited Lecture #1</td>
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<td>15.20-15.50 COFFEE</td>
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<td>16.00-17.00 Fusion</td>
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<td>15.50-17.20 Debate</td>
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<td>17.00-18.00 First Business Meeting</td>
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<td>17.10-18.00 Second Business Meeting</td>
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<td>19.00 Banquet</td>
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## COMMITTEES

### Officers 2012-2013

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<tr>
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<tbody>
<tr>
<td>President</td>
<td>Kazuhisa Takahashi</td>
</tr>
<tr>
<td>Immediate Past President</td>
<td>S. Rajasekaran</td>
</tr>
<tr>
<td>First Vice President</td>
<td>Jeremy Fairbank</td>
</tr>
<tr>
<td>Second Vice President</td>
<td>Robert Gunzburg</td>
</tr>
<tr>
<td>Secretary</td>
<td>Tom Oxland</td>
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<tr>
<td>Treasurer</td>
<td>James Kang</td>
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### Regional Representatives

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<thead>
<tr>
<th>Region</th>
<th>Representative</th>
<th>Terms</th>
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<tbody>
<tr>
<td>Africa</td>
<td>Mohammed Mossaad</td>
<td>2010-2013</td>
</tr>
<tr>
<td>Asia/Pacific</td>
<td>Ashish Diwan</td>
<td>2012-2015</td>
</tr>
<tr>
<td>Canada</td>
<td>Richard Hu</td>
<td>2010-2013</td>
</tr>
<tr>
<td>Europe</td>
<td>Helena Brisby</td>
<td>2010-2013</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Patricia Dolan</td>
<td>2011-2014</td>
</tr>
<tr>
<td>Japan</td>
<td>Osamu Shirado</td>
<td>2010-2013</td>
</tr>
<tr>
<td>Central U.S.</td>
<td>Donna Ohnmeiss</td>
<td>2010-2013</td>
</tr>
<tr>
<td>Western U.S.</td>
<td>Robert Hart</td>
<td>2012-2015</td>
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</tbody>
</table>

### Chairmen and Others

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fellowship Chairperson</td>
<td>Tommy Hansson</td>
</tr>
<tr>
<td>Program Chairperson</td>
<td>Kazuhiro Chiba</td>
</tr>
<tr>
<td>Membership Chairperson</td>
<td>Shinichi Konno</td>
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<tr>
<td>Instructional Course Chairman</td>
<td>Michael Mayer</td>
</tr>
<tr>
<td>Scientific Representatives</td>
<td>Serena Hu</td>
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<td></td>
<td>Paul Hodges</td>
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<td></td>
<td>Jaro Karppinen</td>
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<tr>
<td>By-Laws Chairman</td>
<td>Dr Gunnar Andersson</td>
</tr>
</tbody>
</table>

### ISSLS Program Committee 2012-2013

Kazuhiro Chiba  
David Wong  
Peter Robertson

### Secretariat

ISSLS  
c/o Katarina Olinder Eriksson  
Institute of Clinical Sciences at the Sahlgrenska Academy  
University of Gothenburg  
PO Box 426  
SE 405 30 Gothenburg Sweden

E-mail: katarina.olinder@gu.se  
Phone: + 46 31 786 44 36
Dear President Takahashi, ISSLS Executives, Members, and Guests ...

It is with great pleasure that we welcome you to Scottsdale, Arizona for our 40th Annual Meeting of the International Society for the Study of the Lumbar Spine. Here in the Sonoran Desert this time of year, the sunny warm days are balanced by cooler evening temperatures. We hope you enjoy the venue and take the time to take in the beauty of our surroundings.

Our program committee has assembled an impressive scientific program showcasing the latest research in lumbar spine, along with thought-provoking plenary, guest lectures and debates that are sure to inspire our delegates. We are grateful to Dr. Kazuhiro Chiba, our program committee chairman, who did a wonderful job in organizing this fine program.

We have a number of opportunities for you to also enjoy each other’s company during our ISSLS social events, where friendships are ignited or rekindled, and new collaborations are sparked.

Our administrator, Ms. Katarina Olinder Eriksson, together with our Secretary, Dr. Tom Oxland, Dr. Chiba and the program committee have put in a tremendous amount of effort to make this year’s meeting a success, and we owe them a debt of gratitude for their dedication and service. I would also like to thank our conference organizer, Ms. Pat Curl, who has done a stellar job in collaborating to make sure everything goes smoothly.

Enjoy the 40th Annual Meeting of ISSLS and welcome to Scottsdale!

Sincerely,

Christopher J. Colloca, D.C.
Local Host
**FELLOWSHIPS AND AWARDS**

**ISSLS Wiltse Lifetime Achievement Award**  
*Sponsored by NuVasive, Speed of Innovation*  
A yearly award for exceptional achievement in the spinal field. This award will be announced at the banquet dinner on May 16

**The ISSLS Prize for Lumbar Spine Research**  
*Sponsored by DePuy Synthes Spine*  
The ISSLS Prize winning papers will be presented on May 16 at 11.00

**The ISSLS Clinical Travelling Fellowship**  
*Sponsored by Globus Medical, to be announced during the Fellowship ceremony, May 16 at 10.30*

**The ISSLS MacNab/LaRocca Research Fellowship Award**  
*Sponsored by Ono Pharmaceutical Co., Ltd to be announced during the Fellowship ceremony, Thursday May 16 at 10.30*

**The International ISSLS Fellowship**  
*Sponsored by the Eisai Co Ltd of Tokyo, Japan, to be announced during the Fellowship ceremony, Thursday May 16 at 10.30*

**Best Paper and Poster Award**  
*sponsored by Medtronic*  
The two best papers and poster presentations will be announced during Closing Remarks on Friday, May 17 at 12.00

---

Welcome to next year’s ISSLS annual meeting in South Korea
**SOCIAL PROGRAMS**

Included in registration fee for all; (meeting badge to be worn for entry)

---

**Afternoon Outing to Los Cedros**

**Time:** Wednesday, May 15, 1:00 pm-6:00 pm  
**Dress code:** Casual

Coaches will depart promptly at 1:00 pm from the conference circle drive outside the main entrance to the hotel. Please be sure to be on time and to wear your conference name badge for inclusion.

Los Cedros is an ancient citadel in the high desert of Scottsdale AZ, a premier breeding and training facility for some of the finest horses in America. Lunch will be served upon arrival and you’ll experience the magnificent architecture of the property prior to enjoying a private horse show. Docents are available, and the entire facility is open to us for touring.

---

**Welcome Reception**

**Time:** Monday, May 13, 6:00 pm –8:00 pm  
**Venue:** East Pool of the resort  
**Dress code:** Smart casual

Join your colleagues for a Welcome Reception. Drinks and Hors D’oeuvres will be served.

---

**Banquet**

**Time:** Thursday, May 16, 7:00 pm -10:00 pm  
**Venue:** Hacienda Plaza and Trellis at the resort  
**Dress code:** Business attire

Join all conference delegates for the 40th Anniversary ISSLS Banquet at the resort’s Hacienda Plaza and Trellis. Drinks will be served at 7:00 pm with dinner and entertainment Alfresco to follow.
Tuesday, May 14, 2013
Day Trip to Sedona. ($160, lunch included)

Transportation will leave promptly at 8:00 a.m. from the conference circle drive outside the main entrance to the hotel.

There are few sights as stirring and inspiring as Sedona’s spectacular red rock formations. Experience the stunning, high country beauty of Northern Arizona to discover the softer side of our desert state. Climb 3,000 feet from the desert floor to cooler climates, paying a visit to Montezuma Castle, a five story, twenty-room cliff dwelling carved into the side of the mountain by the Sinagua Indians more than 800 years ago.

As you near Sedona, towering, vibrant red rock formations form one of the most captivating horizons you’ve ever witnessed. The town of Sedona is nestled between these monumental formations, and is the state’s second most visited attraction. Awesome natural beauty is paired with small town charm, as visitors stroll walkways in search of art, artifacts and keepsakes of their visit to this inspired place. A gourmet lunch will be relished in one of Sedona’s favorite restaurants.

Afterwards, shop and browse amidst the shade trees of the Spanish arts and crafts village called Tlaquepaque (pronounced: ta-LAH-kee-PAH-kee). Just to the north of Sedona, take in the beauty of Oak Creek Canyon, where spirited waters flow at the foot of dense evergreen forests. It’s a red rock rendezvous that will leave every guest breathless.

Schedule

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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<tbody>
<tr>
<td>8:00am</td>
<td>Depart Resort (drive time)</td>
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<tr>
<td>10:00am</td>
<td>Visit Montezuma’s Castle</td>
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<tr>
<td>11:00am</td>
<td>Depart to Sedona (drive time)</td>
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<tr>
<td>11:30am</td>
<td>Arrive and Shop in Tlaquepaque</td>
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<tr>
<td>12:30pm</td>
<td>Lunch at Rene’s in Tlaquepaque</td>
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<tr>
<td>1:30pm</td>
<td>Depart for Downtown Sedona</td>
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<tr>
<td>1:45pm</td>
<td>Arrive and Shop</td>
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<tr>
<td>2:00pm</td>
<td>Depart Sedona (drive time)</td>
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<tr>
<td>3:30pm</td>
<td>Stop at Sunset Point for Photograph Opportunity</td>
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<tr>
<td>4:30pm-5pm</td>
<td>Arrive to back at the Scottsdale Princess Resort</td>
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NOTE

We recommend comfortable walking shoes and sunglasses for this tour.
BADGES
Each delegate and registered accompanying person will receive a name badge at registration. For security reasons and for entry to all events included in registration, delegates are requested to wear or bring their badge during all the congress activities.

MEETING VENUE
Fairmont Scottsdale Princess
7575 East Princess Drive
Scottsdale, Arizona, US 85255
TEL + +480 585 4848
FAX + +480 585 0091

INTERNET
ISSLS has arranged “resort wide” internet access for the entire meeting; the access code will be provided to you upon meeting registration check-in.

ELECTRICITY
The United States uses 120V AC 60Hz. They use a Type A electrical plug, or two flat parallel blades are used.

CONFERENCE REGISTRATION DESK
The registration desk and conference secretariat is located in the main foyer of the ballroom. On-site registration will start on Monday, May 13 at 3:00 pm.

OPENING HOURS OF THE REGISTRATION DESK

<table>
<thead>
<tr>
<th>Day</th>
<th>Opening Time</th>
<th>Closing Time</th>
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<tbody>
<tr>
<td>Monday, May 13</td>
<td>3:00 pm - 8:00 pm</td>
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<tr>
<td>Tuesday, May 14</td>
<td>6:30 am - 6:00 pm</td>
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<td>Wednesday, May 15</td>
<td>6:30 am - 1:00 pm</td>
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<td>Thursday, May 16</td>
<td>6:30 am - 5:00 pm</td>
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<tr>
<td>Friday, May 17</td>
<td>6:30 am - 1:00 pm</td>
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TIPPING
15-20% of the bill in restaurants or of taxi fare is the usual and customary in the USA. Tipping for special services provided by hotel staff is fine, but is not expected and is simply a matter of personal preference.

TOURIST INFORMATION
For further information about Scottsdale and what the city has to offer, please visit: http://www.experiencescottsdale.com/

WEATHER
The climate in Scottsdale is one of its greatest assets. In the month of May, the average temperature ranges from 64.4 - 88.1 °F (17.8 - 30.9 °C) with 93% sunshine.

DISCLAIMER
ISSLS, its Organizing Committee and Professional Meeting Consultants, and the Fairmont Scottsdale Princess accept no liability for any injuries/losses incurred by participants and/or accompanying persons, nor loss of, or damage to, any luggage and/or personal belongings. Delegates are advised to take out their own insurance to cover personal possessions, travel and cancellation as the Congress does not cover individuals against cancellation of bookings, theft or damage to belongings.
MONDAY MAY 13

08:00  Membership Committee Meeting  
Location: Sonoran Room

09.30  Strategy Group Meeting  
Location: Sonoran Room

12.00  Executive Committee – Lunch  
Location: Sonoran Room

15:00  Registration

18:00  Opening Ceremony & Welcome Reception  
Location: East Pool

TUESDAY MAY 14

07.45-07.50  Welcome – Chris Colloca, Local Host

07.50-08.00  Program Chairman – Kazuhiro Chiba

SESSION # 1  TOPIC: LOW BACK PAIN
Moderators: Kazuhisa Takahashi and Tom Oxland

08.00-08.05  1. Intradiscal administration of tumor necrosis factor-alpha inhibitor, etanercept, clinically improves intractable discogenic low back pain: A prospective randomized study  

08.07-08.12  2. Does underlying spinal pathology affect the outcome of clinical practice guideline-based treatment for acute lower back pain? A subgroup analysis of the chiro study outcomes:  
Bishop PB, Quon JA, Arthur B; Vancouver, Canada

08.14-08.19  3. Does lumbar paraspinal muscle fatty degeneration correlate with aerobic index and Oswestry disability index?  
Prasarn ML, Konstantinos V, Coyne E, MS, Rechtine GR; Texas and Rochester USA

08.21-08.30  Discussion
08.30-08.35  4.  Enhanced therapeutic alliance modulates pain intensity and muscle pain sensitivity in patients with chronic low back pain: A randomized double-blind controlled trial

08.37-08.42  5.  Indicators predicting successful clinical outcome one year after an intensive pain management program for chronic low back pain

08.44-08.49  6.  The importance of context when evaluating patient satisfaction
   Spratt KF; Lebanon NH, USA

08.51-09.00  Discussion

09.00-09.05  7.  Validation of administrative coding algorithm to identify back-related degenerative diagnoses.
   Martin BI, Mirza SK, Lurie JD, Tosteson ANA, Deyo RA; Dartmouth, USA

09.07-09.12  8.  Lumbar facet joint subchondral bone density is higher in low-back pain patients
   Pan CC, Simon P, Espinoza Orías AA, Takatori R, An HS, Andersson GBJ, Inoue N; Chicago, IL, USA

09.14-09.19  9.  Does cumulative loading of the spine contribute to low back impairment?
   Marras WS, Ferguson SA, Splittstoesser R, Lavender SA, Mendel E; Columbus, Ohio, USA

09.21-09.30  Discussion

9.30-10.00  COFFEE

SESSION #2  TOPIC: DISC DEGENERATION
Moderators: Steven Garfin and Björn Rydevik

10.00-10.05  10.  Comparison of lumbar disc degeneration characteristics between patients with low back pain and sciatica results of clinico-radiological analysis of 224 patients
   Kanna RM, Shetty AP, Shetty JY, Rajasekaran S; Tamil Nadu, India
10.07-10.12  11.  Skip segment disc degeneration after lumbar fusion  
Jung NS, Jeon CH, Chung NS, Park JU, Kim JJ; Suwon, Republic of Korea

10.14-10.19  12.  Lumbar discs and vertebrae change in concert: A 15-year follow-up study  
Videman T, Battie MC, Gibbons L, Gill K; Alberta, Canada; Seattle, WA, USA

10.21-10.30  Discussion

10.30-10.35  13.  Pressure increase in adjacent discs during clinical discography; questions the methods validity  
Hebelka H, Nilsson A, Hansson T; Gothenburg Sweden

Kim HY, Mcclincy M, Vo NV, Sowa GA, Kang JD, Bai M; Pittsburgh, PA USA

10.44-10.49  15.  Morphological classification of intervertebral disc rupture - association with degenerative lumbar diseases-  
Murata K, Akeda K, Sudo A; Mie, Japan

10.51-11.00  Discussion

11.00-11.05  16.  Serum metabolomic biomarkers and lumbar disc degeneration  
Samartzis D, Karppinen J, Ala-Korpela M, Soininen P, Kangas AJ, Chan D, Luk KDK, Cheung KMC; Hong Kong, SAR China, Oulu, Finland, Kuopio, Finland

11.07-11.12  17.  Evaluation of lumbar intervertebral disc degeneration using T1RHO mapping and T2 mapping in a rabbit disc injury model  

11.14-11.19  18.  An interview study of patients’ experience of health after a structured physiotherapy treatment model or surgery due to lumbar disc herniation  
Limbäck Svensson G, Kjellby Wendt G, Thomeé R, Danielson E; Gothenburg, Sweden

11.21-11.30  Discussion

11.30-13.00  LUNCH
SESSION #3  TOPIC: BIOLOGY
Moderators: Jaro Karppinen and Jeffrey Lotz

13.00-13.05  19. Adamts-5 mediates tobacco smoking-induced disc aggreanalysis

Sakai D, Nakamura K, Nakai T, Grad S, Alini M, Chan D, Risbud M, Masuda K, Ando K, Mochida J; San Diego CA, USA, Kanagawa Japan


13.21-13.30  Discussion

13.30-13.35  22. The relationship between vitamin D status and successful fusion
Metzger M, Kanim L, Zhao L, Robinson S, Delamarter RB; Los Angeles, CA, USA

Nakao S, Kawakami M, Fukui D; Wakayama Japan


13.51-14.00  Discussion

SESSION #4  TOPIC: BIOMECHANICS
Moderators: Michael Adams and Hans-Joachim Wilke

14.00-14.05  25. The effect of disc degeneration on anterior shear flexibility in the lumbar spine
Melnyk AD, Wen TL, Chak JD, Kelly A, Cripton PA, Fisher CG, Dvorak MF, Oxland TR; Vancouver BC Canada, Beijing China
14.07-14.12  26  15 days microgravity condition induced disc height loss and bone morphological changes of the mouse lumbar spine
Yamaguchi T, Bae WC, He J, Inoue N, Hargens AR, Lotz J, Sah RL, Asahara H, Masuda K; San Diego, CA USA, Kyoto, Japan. San Francisco, CA, USA., Tokyo, Japan

14.14-14.19  27  The pathogenesis of thoracolumbar vertebral wedge fractures
Landham PR, Baker H, Gilbert S, Pollintine P, Robson-Brown K, Adams MA, Dolan P; Bristol, UK

14.21-14.30  Discussion

14.30-14.35  28  The effect of pedicle screw redirection following lateral wall breach – a biomechanical study using human lumbar vertebrae
Stauff MP, Freedman BA, Kim JH, Hamasaki T, Yoon ST, Hutton WC; Atlanta, GA, USA

14.37-14.42  29  The effects of strain and displacement rate on nerve root injury tolerance to stretch
Cavanaugh JM, Chen CY, Virk GS, Yaldo J, Guruprakash DK, Tanimoto K, Kallakuri S; Detroit, MI USA, Sapporo, Japan

14.44-14.49  30  Male spine motion during coitus: Implications for the low back pain patient
Sidorkewicz N, Cambridge EDJ, McGill SM; Waterloo, Canada

14.51-15.00  Discussion

15.00-15.30  COFFEE

SESSION #5  INVITED LECTURE # 1
Moderators: Kazuhiro Chiba and Hwan Mo Lee

15.30-15.55  Title: Pain Genetics
Inna Belfer, MD, PhD
Department of Anesthesiology and Human Genetics
The University of Pittsburgh/UPMCPA, USA

15.55-16.00  Discussion

SESSION #6  TOPIC: FUSION
Moderators: Howard An and Robert Gunzburg

16.00-16.05  31  Fusion did not improve outcome in decompressive surgery for lumbar spinal stenosis a 2-year follow-up study of 5390 patients from Swespine
Försth P, Michaëlsson K, Sandén B; Uppsala, Sweden
16.07-16.12  32 Five-year outcomes following minimally invasive transforaminal lumbar interbody fusion for spondylolisthesis and degenerative lumbar disease
Park Y, Ha JW, Lee YT, Sung NY; Goyang, South Korea

16.14-16.19  33 MIS-TLIF reduces an incidence of adjacent disc disease in the patient with degenerative spondylolisthesis – Comparative study with conventional TLIF
Ishii K, Hosogane N, Ishihara S, Kaneko Y, Hikata T, Iwanami A, Watanabe K, Nakamura M, Toyama Y, Matsumoto M; Tokyo, Japan, Kanagawa, Japan

16.21-16.30  Discussion

16.30-16.35  34 Short-segment fixations without fusion for thoracolumbar burst fractures with neurological deficit can preserve thoracolumbar motion without resulting in post-traumatic disc degeneration. A 10-year follow-up study

16.37-16.42  35 A systematic review of lumbar fusion rates with and without the use of RHBMP-2
Healy AT, Galimberti F, Lubelski D, Wang T, Abdullah KG, Benzel EC, Mroz TE; Cleveland, Ohio, Durham, North Carolina, USA

16.44-16.49  36 Early versus late initiation of rehabilitation after lumbar spinal fusion – economic evaluation alongside a RCT
Oestergaard LG, Christensen FB, Nielsen CV, Bünger CE, Fruensgaard S, Sogaard R; Aarhus, Denmark, Silkeborg, Denmark, Odense, Denmark

16.51-17.00  Discussion

17:00  FIRST BUSINESS MEETING
SESSION #7
07.45-08.45  SPECIAL POSTER SESSION #1

SESSION #8  TOPIC: EPIDEMIOLOGY/STATISTICS
Moderators: Federico Balagué and Anne Mannion

09.00-09.05  37  Epidemiology of lumbar canal stenosis: a population-based study in Japan
Yabuki S, Fukumori N, Sekiguchi M, Takegami M, Otani K, Wakita T, Kikuchi S, Onishi Y,
Fukuhara S, Konno S; Fukushima Japan, Kyoto Japan, Kansai Japan

09.07-09.12  38  The prevalence of radiographic lumbar spinal stenosis and its associated clinical symptoms in a population-based cohort: the Wakayama Spine Study
Ishimoto Y, Yoshimura N, Muraki S, Yamada H, Nagata K, Hashizume H, Takiguchi N,
Minamide A, Oka H, Akune T, Yoshida M; Wakayama, Japan

09.14-09.19  39  Prevalence and distribution of intervertebral disc degeneration in the spine in a population-based cohort: the Wakayama Spine Study
Teraguchi M, Hashizume H, Yamada H, Muraki S, Yoshimura N, Yoshida M; Wakayama, Japan

09.21-09.30  Discussion

09.30-09.35  40  The prevalence of concomitant osteoporosis and lumbar spinal stenosis and its association with low back pain and health-related quality of life
Hashizume H, Yoshimura N, Ishimoto Y, Nagata K, Akune T, Oka H, Muraki S,
Takiguchi N, Yamada H, Yoshida M; Wakayama, Japan, Tokyo, Japan

09.37-09.42  41  The fate of prospective spine studies posted on www.clinicaltrials.gov
Ohnmeiss DD; Texas, Dallas, USA

09.44-09.49  42  What score on the Oswestry Disability Index indicates a satisfactory symptom state?
Fairbank JC, Van Hooff ML, Mannion AF; Oxford, UK, Nijmegen, The Netherlands,
Zürich, Switzerland

09.51-10:00  Discussion

10.00-10.30  COFFEE
SESSION #9

INVITED LECTURE # 2
Moderators: Michelle Battié and Peter Robertson

10.30-10.55
Basic statistics for clinical research
Kevin Spratt, Lebanon NH, USA

10.55-11.00
Discussion

11.00-11.40
HARRY FARFAN PRESIDENTIAL LECTURE

Introduction – Kazuhisa Takahashi

Title: Molecular Mechanism of Pain
Guest Speaker: Professor Koichi Noguchi, MD, PhD,
Hyogo College of Medicine, Japan

11.40-12.20
Presidential Address – Kazuhisa Takahashi

Introduction – Tom Oxland

THURSDAY MAY 16

SESSION #10

TOPIC: COMPLICATIONS
Moderators: Richard Deyo and Shin-ichi Kikuchi

07.30-07.35  43
Adverse events in spine surgery: A 9 month prospective analysis
Massachusetts, USA

07.37-07.42  44
Analysis of prospective multicenter surveillance data on spine surgery
surgical site infection
Ogihara S, Yamazaki T, Maruyama T, Miyoshi K, Azuma S, Yamada T, Murakami M,
Kawamura N), Hara N, Terayama S, Morii J, Kato S, Yamada K; Japan

07.44-07.49  45
Venous thromboembolism after spine surgery
Schairer W, Pedtke A, Hu S; San Francisco, CA, USA

07.51-08.00
Discussion
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<th>Time</th>
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<th>Title</th>
<th>Authors</th>
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<tr>
<td>08.00-08.05</td>
<td>46</td>
<td>Is surgical specialty associated with 90-day re-operations following lumbar spine fusion? Findings from Medicare</td>
<td>Keeney BJ, Martin BI, Mirza SK; Dartmouth, USA</td>
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<td>08.07-08.12</td>
<td>47</td>
<td>Complications of anterior and posterior lumbar fusion with bone morphogenic proteins</td>
<td>Fineberg S, Oglesby M, Patel A, Pelton M, Singh K; Chicago, IL, USA</td>
<td>Maywood, IL, USA</td>
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<td>08.14-08.19</td>
<td>48</td>
<td>Post-traumatic stress symptoms following elective lumbar arthrodesis are associated with reduced clinical benefit</td>
<td>Hart R, Perry E, Hiratzka Sm Kane M, Desseroth K; Portland, OR, USA</td>
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<td>08.21-08.30</td>
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<td>Discussion</td>
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<td>08.30-08.35</td>
<td>49</td>
<td>Adjacent segment disease after instrumented posterolateral fusion for single level degenerative lumbar spondylolisthesis: Is local sagittal alignment associated with its development?</td>
<td>Ataka H, Tanno T, Miyashita T; Chiba, Japan</td>
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<td>08.44-08.49</td>
<td>51</td>
<td>Predictors of failure of nonoperative management of spinal epidural abscesses</td>
<td>Harris MB, Kim S; Boston, MA USA</td>
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<td>08.51-09.00</td>
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<td>Discussion</td>
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**SESSION #11**
**GENERAL POSTER SESSION, ODD NUMBERS**
09.00-09.30

**SESSION #12**
**GENERAL POSTER SESSION, EVEN NUMBERS**
09.30-10.00

10.00-10.30 **COFFEE**
SESSION #13  Fellowship Award Ceremony

10.30-11.00  Moderator : Tom Oxland
Introduction of Fellowships – Tommy Hansson

Announcement MacNab/LaRocca Fellowship for 2013
MacNab LaRocca Fellowship Report 2012 by Pedro Henrique Isoldi Pohl

Announcement of Globus Fellowship for 2013
Globus Fellowship Report 2012 by Taopheeq Rabiu

Introduction of International Fellow for 2013

Presentation of Spine Young Investigators Award by Scott Boden
Title: How Safe is Lateral Lumbar Interbody Fusion for the Surgeon? A Prospective in-vivo Radiation Exposure Study
Fadi Taher

SESSION #14  THE ISSLS PRIZE PAPERS
Sponsored by DePuy Synthes Spine

11.00-11.10  Introduction and Award Ceremony
Moderator - Dr Gunnar Andersson

11.10-11.20  ISSLS PRIZE – BIOLOGY
Link Protein Peptide (LPP) stimulates chondrocyte matrix synthesis by human intervertebral disc cells with minimal effect on osteogenic genes
Wang Z, Hutton WC, Yoon ST; Atlanta, GA, USA

11.20-11.30  Discussion

11.30-11.40  ISSLS PRIZE – CLINICAL/BIOMECHANICS
The anatomy of failure in lumbar disc herniation - an in-vivo, multi-modal, prospective study of 181 subjects
Rajasekaran R, Bajaj N, Tubaki V, Kanna R, Shetty AP; Tamil Nadu, India

11.40-11.50  Discussion

11.50-13.10  LUNCH
THURSDAY MAY 16 (continued)

SESSION #15  TOPIC: SURGERY
Moderators: James Kang and S Rajasekaran

13.10-13.15  54  A comparison of spinal fusion and non-operative treatment in patients with chronic low back pain: an average 11-year follow-up of three randomized controlled trials
Mannion AF, Brox JI, Fairbank JC; Zürich, Switzerland, Oslo, Norway, Oxford, UK

13.17-13.22  55  Nutritional status in patients undergoing elective spine procedures
Zhou H, Eck J, Lapinsky A, Connolly P, DiPaola C; Massachusetts, USA

13.24-13.29  56  Long-term evaluation of re-operation rates for lumbar total disc replacement and fusion: analysis of 1,237 patients
Blumenthal SL, Guyer RD, Ohnmeiss DD, Zigler JE; Dallas, Texas USA

13.31-13.36  57  The impact of different health dimensions on overall quality of life related to kyphoplasty and non-surgical management
Borgstrom F, Strom O, Boonen S, Wardlaw D, Miltenburger C; Stockholm, Sweden, Leuven, Belgium, Aberdeen, UK, Switzerland

13.38-13.50  Discussion

13.50-13.55  58  The appropriateness of surgery for lumbar degenerative spondylolisthesis
Porchet F, Pittet V, Becker H-J, Steiger F, Vader J-P, Mannion AF and the Zurich Appropriateness of Spine Surgery (ZASS) Group; Zürich, Switzerland, Lausanne, Switzerland

13.57-14.02  59  Five-year follow-up of a prospective, randomized FDA IDE trial comparing two lumbar total disc replacements: clinical outcome and serum ION level analysis for a metal-on-metal device
Guyer RD, Blumenthal SL, Pettine K, Dimmig T, Coric D, Cappuccino A, Roh J; Plano, TX, Loveland, CO; Durham, NC, Charlotte, NC, Lockport, NY, Seattle, WA

14.04-14.09  60  7-10 year follow-up of 2-level Prodisc-L vs. fusion at one institution
Balderston RA, McIntosh TC; Philadelphia, PA, USA

14.11-14.20  Discussion
**SESSION #16  TOPIC: PSYCHOSOCIAL**  
**Moderators: Margareta Nordin and Gwendolyn Sowa**

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<th>Time</th>
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<tr>
<td>14.27-14.32</td>
<td>Relationship between depression and acute low back pain at first medical consultation, three, and six weeks of primary care</td>
<td>Melloh M, Käser A, Elfering A; Nedlands, Australia, Berne, Switzerland</td>
<td>Australia, Switzerland</td>
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<td>14.34-14.39</td>
<td>The relationship of workers compensation status, psychological profiles, and clinical outcome: Results of a prospective, multicenter study</td>
<td>Block AR, Ben-Porath Y, Marek R, Ohnmeiss DD, Guyer RD; Plano, TX, Kent, OH, USA</td>
<td>USA</td>
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<td>14.41-14.50</td>
<td>Discussion</td>
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<td>14.50-14.55</td>
<td>Psychosocial stress is associated with onset of low back pain with disability in college students: a longitudinal study before and after the disaster in Fukushima</td>
<td>Kato K, Sekiguchi M, Nikaido T, Otoshi K, Matsuo Y, Kikuchi S, Konno S; Fukushima, Japan</td>
<td>Japan</td>
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<tr>
<td>14.57-15.02</td>
<td>Effect of preoperative fear avoidance beliefs (FABQ) on two-year postoperative outcome in lumbar spinal stenosis (LSS).</td>
<td>Vanhanen S, Sinikallio S, Aalto T, Pakarinen M, Lehto S, Viinamäki H, Airaksinen O; Kuopio, Finland</td>
<td>Finland</td>
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<td>15.04-15.09</td>
<td>Depression as a prognostic factor of lumbar spinal stenosis: A systematic review</td>
<td>McKillop AB, Battié MC, Carroll LJ; Edmonton, AB, Canada;</td>
<td>Canada</td>
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<td>15.11-15.20</td>
<td>Discussion</td>
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<td>15.20-15.50</td>
<td>COFFEE</td>
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SESSION #17  DEBATE
Moderators: Scott Boden and Jeremy Fairbank
Title: Physical Rehabilitation for Low Back Pain disorders has FAILED to deliver on its promise of improved outcomes for these patients.

15.50-16.05  Proposer: Tommy Hansson
16.05-16.20  Opposer: Hamilton Hall
16.20-16.30  Discussion

Title: BMP is the new gold standard for spine fusion

16.30-16.45  Second Proposer: Harry Herkowitz
16.45-17.00  Second Opposer: Brian Freeman
17.00-17.10  Discussion

17.10  SECOND BUSINESS MEETING
ISSLS BANQUET

FRIDAY MAY 17

SESSION #18  SPECIAL POSTER SESSION # 2
07.45-08.45

SESSION #19  TOPIC: OSTEOPOROTIC VERTEBRAL COMPRESSION FRACTURE
Moderators: Helena Brisby and Serena Hu

09.00-09.05  67  Mortality and morbidity for operated and non-operated vertebral compression fracture patients (osteoporotic and non-osteoporotic) in the U.S. medicare population
Ong KL, Edidin AA, Lau E, Kurtz SM; Philadelphia, PA; Sunnyvale, CA:
Menlo Park, CA USA

09.07-09.12  68  Survival and cost comparison of balloon kyphoplasty (BKP) and vertebroplasty (PVP) using German claims data
Lange A, Alvares L, Sauermann S, Kasperk C, Braun S; Hannover, Germany; Switzerland; Heidelberg, Germany; Hannover, Germany
Differences between cases with bone union and cases with intravertebral cleft following osteoporotic vertebral fractures
Yasuda H, Hoshino M, Tsujio T, Terai H, Toyoda H, Suzuki A, Dohzono S, Matsumoto T, Nakamura H; Osaka, Japan

Comparison of pedicle screw loosening in lumbar spinal fusion surgery in postmenopausal women with osteoporosis among treatment of teriparatide, bisphosphonate and control. aspect form bone quality

Role of weekly administered teriparatide in bony union enhancement after posterior lumbar interbody fusion for osteoporosis-associated lumbar degenerative disorders:
A prospective, randomized multicenter study
Haroh H, Ebata S, Takahashi J, Hasegawa T, Hirabayashi H, Matsuyama Y; Japan

Effect of RH-PTH 1-34 versus bisphosphonate on the union rate of osteoporotic vertebral fractures
Iwata A, Kanayama M, Hashimoto T, Shigenobu K, Oha F, Onishi T, Tanaka M; Japan

SESSION #20 INVITED LECTURE #3
Moderators: Tommy Hansson and David Wong

General overview of treatments for osteoporotic VCF with the reviews of the literature
Douglas Wardlaw

Discussion
SESSION #21  TOPIC: LUMBAR SPINAL STENOSIS
Moderators: Mohammed Mossaad and Tim Yoon

11.00-11.05  73  The impact of pain on function and Health Related Quality of Life in Spinal Stenosis Syndromes. A Register Study of 14,821 patients.
   Sigmundsson FG, Jönsson B, Strömqvist B; Malmö, Sweden

11.07-11.12  74  Is the sedimentation sign associated with spinal stenosis surgical treatment effect in sport?
   Moses RA, Zhao W, Staub L, Melloh M, Barz T, Lurie JD; Lebanon, NH;
   Camperdown NSW, Australia; Nedlands, Australia; Schwedt, Germany

   Sandella DE, Haig AJ, Yamakawa KSJ, Tomkins-Lane CC; Michigan,
   USA Mount Royal, Canada

11.21-11.30  Discussion

11.30-11.35  76  Exposure of the paravertebral muscles affects clinical outcomes in patients with multi-levels lumbar spinal stenosis
   Kawakami M, Nakao S, Fukui D, Miyamoto E, Kinoshita Y, Matsuoka T;
   Wakayama, Japan

11.37-11.42  77  Interspinous spacers compared to decompression or fusion for lumbar stenosis:
   Complications and repeat operations in the medicare population
   Deyo RA, Martin BI, Ching A, Tosteson ANA, Jarvik JG, Kreuter W, Mirza SK;
   Washington and Dartmouth, USA

11.44-11.49  78  X-stop versus decompressive surgery for lumbar neurogenic claudication -
   a randomized controlled trial with two-years follow-up
   Strömqvist B, Berg S, Gerdhem P Johnsson R, Möller A, Sahlstrand T,
   Soliman A, Tullberg T; Lund Sweden

11.51-12.00  Discussion

12.00-12.20  Announcement – Best Paper and Poster Awards
Moderator: Kazuhiro Chiba

   Closing Remarks – Jeremy Fairbank
A. LOW BACK PAIN
Moderators: Finn Bjarke Christensen and Shin-ichi Konno

SP1. Outcomes: Just ask the right question to hear what you want to hear!
Mannion AF, Fairbank JC; Zürich, Switzerland, Oxford UK

SP2. Dynamic surface electromyography topography: A new assessment tool for low back pain rehabilitation
Hu Y, Kwok JWL, Tse JYH, Luk KDK; Hong Kong

SP3. Change in pain rating between post-operative and non-operative patients seeking rehabilitation
McIntosh G, Hall H, Carter T; Toronto, Canada

SP4. Correlation between low back pain intensity in lumbar spinal stenosis measured using the Japanese Orthopedic Association score and the Visual Analogue Scale

SP5. Biomechanical impact of a positioning intervention: carousel platform for palletizing
Ramsey T, Davis K, Kotowski S, Marras W; Cincinnati OH, USA

SP6. Incidence of disc degeneration of the thoracic spine and its effect on the spinal canal and the motion unit in symptomatic patients

B. BIOMECHANICS
Moderators: Keith Luk and Jill Urban

SP7. Intervertebral disc decompression following endplate damage: Implications for disc degeneration depend on spinal level and age
Dolan P, Luo J, Pollintine P, Landham PR, Stefanakis M, Adams MA; Bristol UK, Roehampton UK, Cyprus

SP8. A new numerical method based on contrast-enhanced MRI to investigate the transport properties of healthy and degenerated vertebral endplates
Galbusera F, Tibiletti M, Brayda-Bruno M, Neidlinger-Wlke, Wilke H-J; Ulm Germany, Milan Italy
A characterization of sub-endplate damage during intervertebral disc herniation
Balkovec C, Carstensen M, Leung A, McGill S; Waterloo, ON, London, On, USA

Segmental lumbar facet joint motion
Simon P, Espinoza Orias AA, Andersson GBJ, An HS, Inoue N; Chicago, IL, USA

Kyphoplasty corrects severe vertebral wedge deformities better than vertebroplasty
Landham PR, Baker H, Gilbert S, Pollintine P, Annesley-Williams DJ, Adams MA, Dolan P; Bristol, UK, Nottingham, UK

Role of facet orientation and soft tissue integrity in unstable degenerative spondylolisthesis: a laboratory model
Sinclair MK, Ghanayem AJ, Wojewnik B, Havey RM, Lee A, Voronov LI, Carandang G, Patwardhan AG; Maywood, IL, Hines, IL USA

C. DISC DEGENERATION
Moderators: Seiji Ohtori and Nam Vo

Assessment of the neurocentral synchondrosis in pediatric spines and the “developmental” etiology of Schmorl’s nodes
Luk K, Law T, Khong PL, Portia-Anthony M, Samartzis D; Hong Kong, SAR China

How far into a degenerated annulus can blood vessels and nerves penetrate?
Lama P, Stefanakis M, Sychev I, Summers B, Harding IJ, Dolan P, Adams MA; Bristol UK

COX-2 inhibitor inhibit axonal growth of rat sensory neurons cocultured with injured intervertebral disc in vitro

The role of diabetes type I in intervertebral disc degeneration
Russo F, Ngo K, Yurube T, Vadalà G, Dong Q, Fan Y, Massimo T, Sowa G, Kang J, Vo N; Rome Italy, Pittsburgh USA

Loss of notochordal cells triggers extracellular matrix degradation in a rat tail temporary static compression-induced disc degeneration model
Hirata H, Yurube T, Kakutani K, Maeno K, Takada T, Yamamoto J, Kurakawa T, Miyazaki S, Kurosaka M, Nishida K; Kobe, Japan

Tissue-engineered allograft intervertebral disc transplantation for the treatment of degenerative disc disease: experimental study in a beagle model
Ruan DK, Xin HK, Zhang C, Wang D, Shi Z, Gu T, Wang CF, Wu J, Zhang Y, He Q; Beijing, P R. China
D. PAIN MECHANICS
Moderators: Mamoru Kawakami and Dino Samartzis

SP19. Local placement of clonidine pellet reduced neuropathic pain in a rat facet joint arthritis model
Yamaguchi T, Fujiwarat, Lenz ME, Marx J, Wilsey JT, McKay WF, Masuda K; San Diego, CA, USA, Kyoto, Japan

SP20. Mechanistic assessment of allodynia and gait disturbance in a nicotine-induced intervertebral
disc degenerative rat model; An approach using various pharmacological agents
Okada T, Shoji S, Abe K, Numazawa T, Masuda K, Naiki M; Hyogo, Japan, San Diego, La Jolla, USA

SP21. Activation of astrocytes and microglia in the C3–T4 dorsal horn by lower trunk avulsion in a rat
model of neuropathic pain
Iwasaki R, Matsuura Y, Ohtori S, Suzuki T, Kuniyoshi K, Takahashi K; Chiba, Japan

SP22. Therapeutic efficacy of pregabalin in patients with leg symptoms due to lumbar spinal stenosis
second report: One-year follow-up
Takahashi N, Arai I, Kayama S, Ichiji K, Fukuda H, Handa J, Munakata Y, Konno S; Koriyama City, Japan,
Fukushima City, Japan

SP23. Gender difference of symptom severity in lumbar spinal stenosis: role of pain sensitivity
Kim HJ, Chang BS, Lee CK, Yeom JS; Seoul, Korea

SP24. Attempting to understand the temporal relationship between lumbar muscle inflammation and
perceived low back pain
Kotowski S, Davis K, Lemen L; Cincinnati USA

E. DIAGNOSIS/IMAGING
Moderators: Josef Assheuer and Marek Szpalski

SP25. Predictors of dynamic instability in degenerative spondylolisthesis
Lee JYB, Slikker III W, Siemionow K, Espinoza Orias AA, An HS; Chicago, Illinois USA

SP26. Hip-spine syndrome (complex, misdiagnosed): underdiagnosed hip osteoarthritis
Morimoto T, Tsukamoto M, Shiraki M, Yoshihara T, Sonohata M, Mawatari M; Saga Japan

SP27. Improved diagnostic accuracy of lumbar foraminal stenosis by use of three dimensional
MR imaging : Comparison with conventional MR imaging
Tsutsui S, Yoshida M; Wakayama Japan

SP28. In vivo MRI measurement of spinal cord displacement in the thoracolumbar region: Part 1 -
Straight Leg Raise Test
Rade M, K ön önen M, Vanninen R, Shacklock M, Kankaanpää; Kuopio, Finland, Adelaide, Australia,
Tampere, Finland
SP29. Improved diagnostic accuracy of lumbar foraminal stenosis by use of three dimensional MR imaging: Comparison with conventional MR imaging

SP30. In vivo MRI measurement of spinal cord displacement in the thoracolumbar region: Part 1 - Straight Leg Raise Test
Rade M, Könönen M, Vanninen R, Shacklock M, Kankaanpää; Kuopio, Finland, Adelaide, Australia, Tampere, Finland
SPECIAL POSTER SESSION #2
FRIDAY, MAY 17, 2013 AT 07:45 - 08:45

F. FUSION
Moderators: Osamu Shirado and Douglas Wardlaw

SP31. Should the presence of back pain be considered when making surgical decisions for lumbar spinal fusion?
   Aoki Y, Nakagawa K, Nakajima A, Shibata Y, Sonobe M, Takahashi H, Taniguchi S, Furufu T, Ohtori S, Takahashi K; Chiba, Japan

SP32. Indication of fusion using the intraoperative segmental motion measurement system for lumbar canal stenosis ~ a prospective study ~
   Hasegawa K, Shimoda H, Ishii K, Homma T; Niigata Japan

SP33. Acceleration of lumbar posterolateral fusion using a collagen-binding domain fused with BFGF and allografting in a rat model

SP34. Radiological assessment of lumbar spinal fusion: Radio-stereometric assessment versus computed tomography in a large animal model
   Humadi AH, Freeman BJC, Callary S, Moore R, Haldin K, Hall DJ, Fraser RD; Adelaide, Australia

SP35. The effect of platelet-rich plasma(PRP) on posterolateral fusion(PLF) in a rat model

SP36. Surgical management of degenerative lumbar spondylolisthesis: A comparative study of 5-year outcomes following decompression with fusion and microendoscopic decompression
   Aihara T, Hatakeyama K, Urushibara M, Ouchi J; Funabashi-city, Japan

G. RISK FACTORS
Moderators: Cody Bünger and Koichi Sairyo

SP37. Risk factors for severity of symptoms in patients with lumbar spinal stenosis
   Takeshita K, Takebayashi T, Kimiaki SK, Hara N, Fujii T, Yamashita T, Nagata K, Takahashi K
SP38. Scoliosis is a risk factor for gastroesophageal reflux disease in adult spinal deformity

SP39. Decompressive surgery reduced risk of falling more significantly in patients with lumbar spinal stenosis compared with conservative treatment
Lee BH, Lee SH, Lee HM, Kim HS, Moon SH

SP40. Depressive burden is associated with a poorer 5-year surgical outcome in lumbar spinal stenosis
Pakarinen M, Vanhanen S, Sinikallio S, Aalto T, Lehto S, Viinamäki H, Airaksinen O; Kuopio, Finland

SP41. Suboptimal vitamin D increases risk for infection after spine surgery
Metzger MF, Kanim LA, Zhao L, Robinson ST, Delarmarter RB; Los Angeles, CA, USA

SP42. Propionibacterium acnes causes delayed surgical site infection only in the presence of implant

H. SURGERY
Moderators: Hiroaki Nakamura and Jong-Beom Park

SP43. Implementation and impact of pre-operative peer case review in a spine practice
Guyer RD, Shivers J, Ohnmeiss DD, Zigler JE; Plano, TX, USA

SP44. Outcomes following transforaminal endoscopic surgery – two year RCT results
Arthur C and Gibson JNA; Edinburgh, Scotland

SP45. Clinical and radiographic long-term results of peek-non-fusion spine implants
Melloh M, Barz T, Staub LP, Buller C, Lord SJ, Merk HR; Nedlands, Australia, Schwedt/Oder, Germany, Sydney, Australia, Greifswald, Germany

SP46. Outcomes of anterior, posterior, and circumferential lumbar fusions
Fineberg S, Oglesby M, Patel A, Pelton M, Singh K; Chicago, IL, Maywood, IL, USA
I. OSTEOPOROSIS/AGING SPINE
Moderators: David Hall and Yoshiharu Kawaguchi

SP49. Foraminal stenosis caused by osteoporotic vertebral compression fracture of the lumbar spine
Toki S, Nagamachi A, Takahashi Y; Mitoyo, Japan

SP50. Effect of prevalent vertebral fractures on the occurrence pattern of new vertebral fractures -
A population-based cohort study-
Akeda A, Kato T, Nishimura A, Murata K, Sudo A; Mie, Japan

SP51. Teriparatide accelerates lumbar posterolateral fusion in women with postmenopausal
osteoporosis: Prospective study
Sakuma Y, Kubota G, Oikawa Y, Inage K, Sainoh T, Sato J, Toyone T, Takahashi K; Chiba, Japan

SP52. Acute vertebral fracture at the fused segment after lumbar fusion surgery in elderly patients
with osteoporosis
Sainoh T, Nobukiyo M, Aoki M, Orita S, Ohtori S, Takahashi K, Kawaguchi Y; Chiba, Japan

SP53. Incidence rate and primary diagnostic accuracy of occult vertebral fracture in aged women
complaining of acute low back pain
Terakado A, Orita S, Kubota G, Kanzaki T, Mori H, Shinohara Y, Ohtori S, Takahashi K; Chiba, Japan

SP54. Aging-associated changes in paraspinous muscles and psoas muscles
Kita T, Takayama K, Kanematsu F, Yasunami T, Ikeda S, Kyo Y, Skanaka H, Yamano Y; Osaka, Japan
J. LUMBAR SPINAL STENOSIS
Moderators: Yong Hai and Björn Strömqvist

SP55. Fall and lumbar spinal stenosis in the communitys
Otani K, Kikuchi S, Yabuki S, Nikaido T, Watanabe K, Kato K, Konno S; Fukushima City, Japan

SP56. Visually assessed severity of lumbar spinal canal stenosis is paradoxically associated with leg pain and objective walking ability

SP57. Prevalence of vitamin D deficiency in patients with lumbar spinal stenosis and its relationship with pain
Kim TH, Lee SH, Lee BH, Park JO, Kim HS, Lee HM, Moon SH; Korea

SP58. Conservative and surgical treatment improves pain and ankle-brachial index in patients with lumbar spinal stenosis

SP59. Surgical decompression of lumbar spinal stenosis normalizes impairment in objective measures of physical activity: a case-control study
Smuck M, Matthew P, Buman MP, Martinez A, Haskell WL, Kao MCJ; Redwood City CA, Phoenix AZ, Palo Alto CA, Redwood City CA, USA

SP60. The effect of decompression surgery on low back pain with lumbar spinal stenosis: Analysis from the symptom caused by gait-loading test
Nikaido T, Kikuchi S, Yabuki S, Otani K, Watanabe K, Kato K, Konno S; Fukushima, Japan
GP1  Suitability evaluation of restoring the intervertebral disc mechanics in treating osteoporotic vertebral fracture using kyphoplasty with PMMA or Calcium-P based cement
Lo HJ, Chen HM; Taipei City, Taiwan

GP2  Assessment of pain behavior in a rat model of intervertebral disk injury using the catwalk gait analysis system

GP3  Hypertrophy of the ligament flavum in degenerative lumbar stenosis associated with the increased expression of fractalkine (CX3CL1)/CX3CR1 chemokine
Oh IS, Sur DW, Ha KY; Seoul, Korea

GP4  Comparative study of lumbar intervertebral disc biomechanical characteristics with or without hydrogel injection after nucleus discectomy
Manman G, Zhiyu Z, Wenbin D, Xuejun D, Xuenong Z; Sun Yat-sen, China

GP5  Spino-pelvic-rhythm in normal subjects and high-class athletes who overcame chronic low back pain
Hasebe K, Sairyo K, Hada Y, Dezawa A, Okubo Y, Kaneoka K, Nakamura Y; Kawasaki Japan, Waseda Japan, Kawasaki Japan, Saitama Japan

GP6  Novel two-component interbody fusion device improves bone-implant interface without compromising stability: a cadaver study
Wilke H-J, Volkheimer D, Robie B, Christensen FB; Ulm Germany, Risskov Denmark, Aarhus Denmark

GP7  Biomechanical characterization of a novel low-stiffness posterior spinal implant under anterior shear loading in a degenerative spinal model
Melnyk AD, Chak JD, Singh V, Kelly A, Cripton PA, Fisher CG, Dvorak MF, Oxland TR; Vancouver BC Canada, Memphis TN USA

GP8  Effects of sequential unilateral facetectomy on cervical spinal stability
Mageswaran P, Tolhurst S, Colbrunn R, Bonner T, Techy F, McLain R; Cleveland OH USA, Chicago, IL, USA

GP9  Does head weight affect cervical spine stability? An in vitro robotic biomechanical study
Mageswaran P, Tolhurst S, Colbrunn R, Bonner T, Techy F, McLain R; Cleveland, OH, USA, Chicago, IL, USA

GP10 Do pedicle screws that have breached the pedicle wall provide stronger purchase as compared to smaller pedicle screws placed intra cortex?
Higashino K, Goda Y, Daisuke S, Kobayashi T, Matsuura T, Fujimiya M, Hutton WC, Yasui N; Tokushima, Japan, Sapporo, Japan, Hokkaido, Japan, Atlanta, Georgia, USA
GP11  Biomechanical effect of the progression of disc degeneration at L5/S1 on adjacent discs in a lumbar spine  
Natarajan RN, Andersson GBJ; Chicago, IL, USA

GP12  Investigation of equivalent stress of adjacent vertebrae after balloon kyphoplasty by a CT-based finite element method  
Iwakura N, Matsuura M, Shiba M, Wada K, Murata Y, Kato Y; Tokyo, Japan, Chiba, Japan

GP13  Histomorphometric and radiographic changes after wallis implantation in rats  
Melloh M, Barz T, Lange J, Staub LP, Merk HR, Klöting I, Follak N; Nedlands, Australia, Schwedt/ Oder, Germany, Greifswald, Germany, Sydney, Australia, Magdeburg, Germany

GP14  Biomechanical analysis of the thoracic spine following decompressive procedures  
Healy AT, Lubelski D, Mageswaran P, Mroz T; Cleveland, OH, USA;

GP15  3D-CT simulation study of the iliac screw for the firm fixation  
Otsuki B, Fujibayashi S, Takemoto M, Izeki M, Matsuda S; Kyoto, Japan

GP16  Is there an association between abdominal muscles and degenerative spondylolisthesis?  
Tcherveniakov P, Fraser R, Freeman BJC, Jones CF; Adelaide, Australia

GP17  Muscle injury in rats induces up-regulation of inflammatory cytokines in muscle and pain-related neuropeptides in dorsal root ganglia innervating muscle. -the pathological-mechanism of continuous muscle pain-  

GP18  Carbon nanotube-reinforced calcium phosphate cement for drug delivery in multiple myeloma bone disease treatment  
Lin B, Zhou H, Bhaduri S, Leaman D, Goel V, Agarwal A; Toledo, OH, USA

GP19  Biomechanical contribution of transverse connectors in the setting of a thoracic pedicle subtraction osteotomy  
Tracey RW, Paik H, Lehman Jr. RA, Kang DG, Cody JP, Cardoso MJ, Dmitriev AE; Bethesda, MD USA

GP20  The biomechanical consequences of rod reduction following thoracic ponte osteotomy and lumbar facetectomy  

GP21  Tapping insertional torque predicts better pedicle screw fixation and optimal screw size selection  
Tracey RW, Helgeson MD, Kang DG, Lehman Jr RA., Cody JP, Dmitriev AE; Bethesda, MD USA

GP22  A novel load sharing lumbar interbody fusion device (Interplate®) provides better stability compared to the pedicle screw system  
Palepu V, Kodigudla M, Aakash A, Dhanvin D, Goel VK, Moran J; Toledo, OH Cleveland, OH, USA

GP23  Initial results of a five-year in vivo longitudinal study on lumbar segmental axial motion and low back pain  
Oshita Y, Espinoza Orías AA, Andersson GBJ, An HS, Inoue N.; Chicago, IL. USA
Failure under cyclic loading in a lumbar disc shifts from inner annulus layers to peripheral annulus with increasing disc degeneration
Qasim M, Natarajan RN, An H, Andersson GBJ; Chicago, IL, USA

In vivo characterization of the 3D lumbar foramen geometry
Senoo I, Espinoza Orías AA, Park DK, Andersson GBJ, An HS, Inoue N; Chicago, IL, USA

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Yang S-H, Espinoza Orías AA, Pan C-C, Senoo I, Andersson GBJ, An HS, Inoue N; Chicago, IL, USA

The effect of difference in hamstrings flexibility on lumbo-pelvic rhythm
Matsunaga N, Okubo Y, Kaneoka K; Waseda, Japan Saitama, Japan

Effect of mental stress on low back load while lifting an object
Katsuhiro J, Matsudaira K, Iwakiri K, Maruyama H; Otawara Japan, Kanagawa Japan

Biomechanical analysis of fusion segment rigidity upon stress at both the fusion and adjacent segments - a comparison between unilateral and bilateral pedicle screw fixation
Kim HJ, Kang KT, MSb, Park JH, Yeom JS, Chang BS, Lee CK; Seoul, Korea

In vivo response to a paraspinous tension band device with titanium coil. An ovine implantation study
Ehrhart EJ, Fielding L, Santoni AL, Santoni BG, Puttlitz CM, Ruehlman DR, Seim III HB, Turner AS; Fort Collins, CO, San Carlos, CA, Tampa, FL

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Hayashi T, Maeda T, Mori E, Ueta T, Yuge I, Kawano O, Takao T, Sakai H, Masuda M, Morishita Y, Shiba K; Fukuoka, Japan

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Ishii K, Ishihara S, Kaneko Y, Iwanami A, Hikata T, Hosogane N, Watanabe K, Nakamura M, Toyama Y, Matsumoto M; Tokyo, Japan, Kanagawa, Japan

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Kim HJ, Kang KT, Lee CK, Chang BS, Yeom JS; Seoul Korea

Correlation between intradiscal pressure and disc height: effect of follower load and rotation
Bell KM, Yan Y, Dugan T, Kang JD; Pittsburgh, USA

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Rade M, Könönen M, Vanninen R, Shacklock M, Kankaanpää M, Airaksinen O; Kuopio, Finland, Adelaide, Australia, Tampere, Finland

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Agarwal A, Kaul V, Goel VK, Agarwal AK; Toledo, OH, USA

Changes in endplate thickness after disc herniation – a biomechanical perspective
Agarwal A, Goel VK, Agarwal AK; Toledo, OH, USA

Effect of an interspinous implant on in vivo dynamic lumbar spine stiffness and biplanar intersegmental motion
Szpalski M, Fabek LG, Gunzburg R, Colloca CJ, McAviney J, Afifi M, Moore RJ, Freeman BJ; Brussels, Belgium; Tempe, Arizona, USA; Sydney, Australia; Calgary, Alberta, Canada; Adelaide, Australia

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Agarwal A, Goel VK, Agarwal AK; Toledo, OH, USA

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Szpalski M, Fabek LG, Gunzburg R, Colloca CJ, McAviney J, Afifi M, Moore RJ, Freeman BJ; Brussels, Belgium; Tempe, Arizona, USA; Sydney, Australia; Calgary, Alberta, Canada; Adelaide, Australia

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Truumees E, Kiapour AM, Goel VK, Demetropoulos CK; Austin, TX, Toledo, OH, USA

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*Mayer JM, Quillen WS, Dagenais S; Florida, USA*

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*Matsuo Y, Kurata J, Yoshida K, Sekiguchi M, Nikaido T, Kikuchi S, Konno S; Fukushima Japan, Tokyo Japan*

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*Ezure T, Aihara T; Funabashi-city, Japan*

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*Kim HJ, Yeom JS, Lee DB, Park JH, Kang KT, Chang BS, Lee CK; Seoul, Korea*

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*Yuasa A, Kanayama M, Hashimoto T, Shigenobu K, Oha F, Iwata A, Onishi T, Tanaka M; Hakodate, Japan*

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