

MEETING AT-A-GLANCE

TUESDAY JUNE 3	WEDNESDAY JUNE 4	THURSDAY JUNE 5	FRIDAY JUNE 6	SATURDAY JUNE 7
08.00 Membership Committee Meeting	07.00-07.45 Breakfast	07.00-07.45 Breakfast	07.00-07.45 Breakfast	06.30 Breakfast
09.30 Strategy Group Meeting	07.45 Welcome	07.45-08.45 Special Poster Session I	07.30-08.20 Outcomes	07.45-08.45 Special Poster Session II
12.00 ExCom Meeting	08.00-09.00 Herniated Disc	09.00-10.00 Biology and degeneration	08.22-09.02 Analysis of Physio-logy and Psychology	09.00-10.00 Osteoporotic verte- bral compression fracture
15.00 Registration opens	09.00-10.00 Disc Degeneration	10.00-10.30 COFFEE	09.10-10.10 General Poster Session 1 and 2	10.00-10.30 COFFEE
18.00 Welcome Reception	10.00-10.30 COFFEE	10.30-11.00 Low Back Pain	10.10-10.40 COFFEE	10.30-11.00 Invited Lecture #3
	10.30-11.40 Complications	11.00-11.40 Harry Farfan Presidential Lecture	10.40-11.00 Fellowship Award Ceremony	11.00-12.00 Lumbar Spinal Stenosis
	11.40-12.10 Invited Lecture #1	11.40-12.20 Presidential address	11.00-12.10 The ISSLS Prize Papers	12.00-12.20 Announcement – Best paper and poster awards
	12.10-13.30 LUNCH	13.00-21.30 Afternoon outing	12.10-13.30 LUNCH	Closing Remarks Meeting adjourned
	13.30-14.30 Outcomes/Cost Effectiveness		13.30-14.30 Surgery	
	14.30-15.30 Degenerative Changes		14.30-15.00 Invited Lecture #2	
	15.30-16.00 COFFEE		15.00-15.30 Quality of Life and Infection	
	16.00-16.40 Disc Degeneration		15.30-16.00 COFFEE	
	16.40-17.40 Symposium #1		16.00-16.40 Imaging	
	17.45- First Business Meeting		16.40-17.20 Symposium #2	
			17.25 Second Business meeting	
			19.00 Banquet	



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COMMITTEES

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First Vice President	Robert Gunzburg
Second Vice President	James Kang
Secretary	Tom Oxland
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Treasurer	Helena Brisby

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Asia/Pacific	Ashish Diwan (2012-2015)
Canada	Stuart McGill (2013-2016)
Europe	Keita Ito (2013-2016)
United Kingdom	Patricia Dolan (2011-2014)
Japan	Seiji Ohtori (2013-2016)
Eastern U.S.	John Lurie (2011-2014)
Central U.S.	Frank Phillips (2010-2013)
Western U.S.	Robert Hart (2012-2015)

Chairmen and others

Fellowship Chairperson	Michelle Battié
Program Chairperson	David Wong
Membership Chairperson	Teija Lund
Instructional Course Chairman	Margareta Nordin
Scientific Representatives	Paul Hodges
	Jaro Karppinen
	Dawn Elliott
By-Laws Chairman	Dr Gunnar Andersson

ISSLS Program Committee 2013-2014

David Wong
Peter Robertson
Sally Roberts

Secretariat

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WELCOME



Dear President Fairbank, ISSLS members, and guests

It is with great pleasure that we welcome you to Seoul, Korea for our 41st Annual Meeting of the International Society for the Study of the Lumbar Spine.

The City of Seoul has 600 years of history. You can find not only historical and cultural heritage but also the most advanced high technologic industry. Here in the City of Seoul, you can experience that the old traditional culture is well balanced with modern art. The climate is comfortable in early June. We hope you enjoy the meeting as well as take the time to feel the real beauty of Seoul.

The program committee has planned a very interesting and informative program. Sessions will cover various subjects regarding the latest research in lumbar spine, along with guest lectures and debates. I am sure that this meeting will be a suitable platform to share ideas and knowledge of the most recent developments about basic and clinical science of the lumbar spine.

Our administrator, Ms. Katarina Olinder Eriksson, together with our Secretary, Dr. Tom Oxland, Program Committee Chairman Dr. David Wong and Korean ISSLS members put in a tremendous amount of effort to make this year's meeting a great success.

Enjoy the 41st ISSLS Annual Meeting and I welcome everybody once again and congratulate on a successful meeting. Thank you.

Sincerely,

Hwan-Mo Lee, MD
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 Thursday, June 5

The ISSLS Prize for Lumbar Spine Research

Sponsored by DePuy Synthes Spine.

The ISSLS Prize winning papers will be presented on Thursday, June 5 at 11.00

The ISSLS Clinical Travelling Fellowship

Sponsored by Globus Medical, to be announced during the Fellowship ceremony, Thursday, June 5 at 10.40

Best Paper and Poster Award sponsored by Ono Pharmaceutical Co., Ltd

The two best paper and poster presentations will be announced during Closing Remarks on Saturday June 7 at 12.30



**Welcome to next year's ISSLS Annual Meeting in
San Francisco, June 8-12, 2015**

SOCIAL PROGRAMS

(included in registration fee for all)

Additional tickets, if available, can be purchased at the registration desk



Welcome reception

Time: June 3 (Tue) 18:00

Location: Official President's Residence at the Yonsei University Campus

Dress code: Smart casual

All participants are cordially invited to the Welcome Reception to be held at the Official Presidents Residence. This is a great opportunity to mingle with one another over delicately prepared buffet.



Afternoon outing to Korean Folk Village

Time: June 5 (Thu), 13:00 – 21:00

Dress code: Casual

As a home for wide collections of the Korean cultural artifacts, the Korean Folk Village is a unique place to experience natural atmosphere with over 260 Korean traditional houses, which are a reminiscent of the late Joseon Dynasty. (Brown Bag as a lunch box and Korean food for dinner will be served)



Banquet

Time: June 6 (Fri) 19:00

Venue: Grand Hilton Seoul

Dress code: Business attire

All participants are welcomed to join in this formal dinner to meet professionals and newcomers at the banquet and strengthen professional networks and friendship.

ACCOMPANYING PERSONS TOUR

(included in registration fee for accompanying persons)

Additional tickets, if available, can be purchased at the registration desk

Changdeokgung & the Secret Garden

Date/Time: June 4 (Wed), 09:00~13:30

Changdeokgung Palace is one of the historic attractions representing traditional beauty of Korea. It was the second royal palace built followed by the completion of Gyeongbukgung Palace in 1405. Changdeokgung Palace's rear garden or so-called the "Secret Garden" was constructed during the reign of King Taejong and served as a resting place for royal family members. Changdeokgung was designated as the UNESCO's World Cultural Heritage in 1997.



National Museum of Korea

Date/Time: June 6 (Fri), 09:00~13:30

The National Museum of Korea is ranked as the sixth largest museum in the world. The Museum houses more than 140,000 precious Korean cultural assets including national relics and artifacts from ancient days to the modern era.



GENERAL INFORMATION

Meeting Venue

Yonsei University Health System
Severance Hospital
Eunmyung Auditorium: Main Congress
venue at Main Building, 6th Floor
Address: 50-1 Younsei-Ro, Seodaemun-Gu,
Seoul 120-752, KOREA
Website: <http://www.yuhs.or.kr/en/>

Conference Shuttle Bus

Shuttle buses will be operated between
Severance Hospital and Grand Hilton Seoul
hotel for ISSLS 2014 participants during the
Conference. See next page

Internet

Internet is provided at the venue and the
log-in is:
SSID: iseurance (5G)
Password: severance

Conference registration desk

The registration desk and conference
secretariat is located in the main foyer of
the Eunmyung Auditorium. Onsite
registration will start on Tuesday, June 3 at
3:00 pm

Opening hours of the registration desk

Tuesday, June 3	15:00-18:00
Wednesday June 4	07:00-18:00
Thursday June 5	07:00-13:00
Friday June 6	07:00-17:00
Saturday June 7	07:00-13:00

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.

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.

GENERAL INFORMATION

ISSLS 2014 Shuttle Bus Timetable June 3-5

Date	Depart from	Arrive to	Departure time										
			07:30	08:00	08:30	09:00	09:30	10:00	10:30	11:00			
03-jun	Grand Hilton	Severance Hospital	07:30	08:00	08:30	09:00	09:30	10:00	10:30	11:00			
			14:00	14:20	14:40	15:00	15:20	15:40	16:00	16:20	16:40	17:00	
	Severance Hospital	Grand Hilton	12:30	13:00	13:30	14:00	14:30	15:00	15:30	16:00	16:30	17:00	17:30
	Grand Hilton	President's Residence	17:30	17:40	17:50								
	President's Residence	Grand Hilton				19:40	19:50	20:00	20:10				
Lotte City Mapo					19:40								
04-jun	Grand Hilton	Severance Hospital	06:45	07:00	07:15	07:30	07:45	08:00	09:00	10:00	11:00	12:00	13:00
			14:00	15:00	16:00	17:00							
	Lotte City Mapo	Severance Hospital	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00
	Severance Hospital	Grand Hilton	07:30	08:00	08:30	09:30	10:30	11:30	12:30	13:30	14:30	15:30	16:30
			17:30	18:00	18:15	18:45							
		Lotte City Mapo	07:30	08:30	09:30	10:30	11:30	12:30	13:30	14:30	15:30	16:30	18:00
			18:45										
Severance Hospital	Changdeok-gung	09:30 12:30 (round trip)											
05-jun	Grand Hilton	Severance Hospital	06:45	07:00	07:15	07:30	07:45	08:00	09:00	10:00	11:00	12:00	
	Lotte City Mapo		07:00	08:00	09:00	10:00	11:00	12:00					
	Severance Hospital	Grand Hilton	07:30	08:00	08:30	09:30	10:30	11:30					
		Lotte City Mapo	07:30	08:30	09:30	10:30	11:30						
	Severance Hospital	Korean Folk Village	13:00 19:00 (round trip)										

GENERAL INFORMATION

ISSLS 2014 Shuttle Bus Timetable June 6-7

06-jun	Grand Hilton	Severance Hospital	06:45	07:00	07:15	07:30	07:45	08:00	08:30	09:00	10:00	11:00	12:00
			13:00	14:00	15:00	16:00	17:00						
	Lotte City Mapo		07:00	08:00	08:30	09:30	10:30	11:30	12:30	13:30	14:30	15:30	16:30
	Severance Hospital	Grand Hilton	07:30	08:00	08:30	09:30	10:30	11:30	12:30	13:00	14:00	15:00	16:00
			17:00	17:45	18:00	18:15	18:45						
	Lotte City Mapo	07:30	08:30	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	
	18:00	18:45											
Severance Hospital	National Museum of Korea	09:00 12:00(round trip)											
07-jun	Grand Hilton	Severance Hospital	06:45	07:00	07:15	07:30	07:45	08:00	09:00	10:00	11:00	12:00	
	Lotte City Mapo		07:00	08:00	09:00	10:00	11:00	12:00					
	Severance Hospital	Grand Hilton	07:30	08:00	08:30	09:30	10:30	11:30	12:00	12:30	13:15		
		Lotte City Mapo	07:30	08:30	09:30	10:30	11:30	12:30	13:15				

TUESDAY JUNE 3

- 08:00 Membership Committee Meeting
Location: Grand Hilton Hotel, Executive Room Lounge
- 09:30 Strategy Group Meeting
Location: Central administration Building, 6th floor , Professor conference room, Severance Hospital
- 12:00 Executive Committee – Lunch
Location: Central administration Building, 6th floor , Professor conference room, Severance Hospital
- 15:00 Registration
- 18:00 **Opening Ceremony & Welcome Reception**
Location: Official President’s Residence at the Yonsei University

WEDNESDAY JUNE 4

- 07.45-07.50 Welcome – Program Chairman – David Wong
- 07.50-08.00 Welcome - Local Host - Hwan Mo Lee
- SESSION #1** **TOPIC: HERNIATED DISC**
Moderators: Jeremy Fairbank and Tom Oxland
- 08.00-08.05 1. Surgical versus Non-Operative Treatment for Lumbar Disc Herniation: Eight-Year Results for the Spine Patient Outcomes Research Trial (SPORT)
Lurie JD, Tosteson TD, Tosteson ANA, Zhao W, Morgan TS, Abdu WA, Herkowitz H, Weinstein JN; USA
- 08.07-08.12 2. Body Mass Index and its Association with Lumbar Disc Herniation and Sciatica: a Large-Scale, Population-Based Study
Samartzis D, Karppinen J, Luk KDK, Cheung KMC; China, Finland
- 08.14-08.19 3. Defining disc herniation: is clinical diagnosis enough?
Battié MC, Gibbons L, Bruno-Brayda M, Fairbank JC, Heywood C, Lazary A, McCal II, Roberts S, Varga PP; Canada, Finland, UK, Hungary, Italy, USA
- 08.21-08.30 *Discussion*
- 08.30-08.35 4. How healthy discs herniate: a biomechanical and microstructural study investigating the combined effects of compression rate and flexion
Wade KR, Robertson PA, Thambyah A, Broom ND; New Zealand

WEDNESDAY JUNE 4 continued

- 08.37-08.42 5. The significance of cartilage endplate within a lumbar disc herniation
Lama P, Zehra U, Balkovec C, Harding IJ, Dolan P, Adams MA, UK
- 08.44-08.49 6. Spontaneous resorption of lumbar disc herniation is less likely when Modic changes are present
Shan Z, Fan S, Xie Q, Suyou L, Liu J, Wang C, Zhao F; Zhejiang, China
- 08.51-09.00 *Discussion*
- SESSION #2** **TOPIC: DISC DEGENERATION**
Moderators: Kazuhiro Chiba and Hans-Joachim Wilke
- 09.00-09.05 7. Accelerated DDD in young adults is associated with polymorphisms in MMP 7, CALM 1 and Cox 2 genes
Rajasekaran S, Kanna RM, Cheung K, , Chan D, Kao P, Yee A, Raveendran M, Senthil N; Pokfulam, Hong Kong, India
- 09.07-09.12 8. Characterization of annulus layer deformations in an intact intervertebral disc under mechanical compression
Han SK, Tang QG, Kim HC, Chen Y, Hsieh AH; USA
- 09.14-09.19 9. Early pattern and longitudinal evolution of degenerative changes in individual components of intervertebral discs in stressed and non-stressed segments of lumbar spine: an in-vivo MR imaging study
Sharma A, Lancaster S, Bagade S, Hildebolt C; USA
- 09.21-09.30 *Discussion*
- 09.30-09.35 10. Comparisons of the Effects of Time to Surgery in the Spine Patient Outcomes Research Trials for Lumbar Disc Herniation (IDH), Spinal Stenosis (SpS), and Degenerative Spondylolisthesis (DS)
Tosteson TD, Lurie JD, Zhao W, Blood E, Spratt K, Tosteson ANA, Weinstein JN; USA
- 09.37-09.42 11. Improvement of global sagittal alignment after lumbar decompression without fusion – analysis of 88 cases
Fujii K, Kawamura N, Masuyama S, Masuda K, Hirao Y, Niitsuma G, Takahashi N, Ikegami M, Kunogi J; Japan
- 09.44-09.49 12. TOEI STUDY - Sagittal Spinal Alignment Versus Health-Related Quality of Life in High Age Volunteers
Togawa D, Yamato Y, Yasuda T, Watanabe Y, Ide K, Yamada T, Kobayashi S, Arima H, Banno T, Hasegawa T, Hoshino H, Matsuyama Y; Japan

WEDNESDAY JUNE 4 continued

- 09.51-10.00 *Discussion*
- 10.00-10.30 COFFEE**
- SESSION #3 TOPIC: COMPLICATIONS**
Moderators: Moon-Soo Park and Tim Yoon
- 10.30-10.35 13. Predictable Factors of Deep Vein Thrombosis in Patients Undergoing Spine Surgery
Ikeda T, Miyamoto H, Hashimoto K, Akagi M; Japan
- 10.37-10.42 14. Post-surgical rehabilitation patients have similar fear avoidance behaviour levels as those in non-operative care.
Gregg C, McIntosh G, Hall H, Hoffman C, Carter T; New Zealand, Canada
- 10.44-10.49 15. The Re-operation Rate in a Single Dataset Varies Significantly Depending on the Definitions Applied
Ohnmeiss DD, Baker R, Guyer RD, Blumenthal SL, Zigler JE; USA
- 10.51-11.00 *Discussion*
- 11.00-11.05 16. Prevalence of neuropathic pain and its surgical outcome in surgically indicated degenerative lumbar spinal disease: Multi-center prospective survey
Cho Y-E, Whang C-J, Suk K-S, Kim J-H, Park M-S, Yang J-H, Kim S-Y, Lee H-M, Moon S-H; Korea
- 11.07-11.12 17. Proximal Junctional Failure in Adult Deformity Patients Results in Higher Rate of Revision but Limited Impact on Clinical Outcome
Hart R, Hiratzka J, Hamilton DK, Bess S, Schwab F, Shaffrey C, Ames C, Lafage V, Smith J, Mummaneni PV, Klineberg E, McCarthy I, Burton D, Hostin R, Study Group, International Spine; USA
- 11.14-11.19 18. TLIF surgery results in slightly higher risk of neurogenic leg pain 2 years after surgery compared to standard instrumented posterolateral fusion. Results from a randomized clinical trial
Høy K, Grycel B, Andersen T, Niederman B, Helmig P, Stender Hansen E, Li H, Bünger C; Denmark
- 11.21-11.26 19. Lumbar fusion surgery for degenerative disc disease is associated with significantly higher rates of failed back surgery syndrome development when compared to fusion for spondylolisthesis in worker's compensation subjects
Anderson JT, Duff RJ, Ahn UM, Ahn NU; USA
- 11.28.11.40 *Discussion*

WEDNESDAY JUNE 4 continued

- 11.40-12.00 **INVITED LECTURE #1**
 Moderator: Hwan-Mo Lee
 North Korea through the eyes of medicine
Dr. John Linton, Severance Hospital, Korea
- 12.00-12.10 *Discussion*
- 12.10-13.30 LUNCH**
- SESSION #4 TOPIC: OUTCOMES / COST EFFECTIVENESS**
 Moderators: Howard An and Ho-Joong Kim
- 13.30-13.35 20 Long-term Cost Effectiveness of Lumbar Spine Surgery in the Spine Patient Outcomes Research Trial (SPORT)
Tosteson ANA, Tosteson TD, Lurie JD, Zhao W, Blood E, Grove MR, Abdu WA, Weinstein JN; USA
- 13.37-13.42 21 Transforaminal lumbar interbody fusion vs. posterolateral instrumented fusion - Cost-utility evaluation alongside an RCT with 2-years of follow-up
Høy K, Christensen A, Andersen T, Bünger C, Helmig P, Hansen ES, Sjøgaard R; Denmark
- 13.44-13.49 22 Trends in the use of Bone Morphogenetic Protein among patients undergoing fusion for degenerative diagnoses in the United States, 2002-2011
Martin BI, Lurie JD, Deyo RA, Tosteson ANA, Farrokhi F, Mirza SK; USA
- 13.51-14.00 *Discussion*
- 14.00-14.05 23 Cost-effectiveness of Specialty Care vs Spine Strengthening for Chronic Spinal Pain
Kim PD, Raiszadeh R, O'Neill CW, Kim CW, Keh E, Durr P, Jamison R, Perelson G, Jenrette J, Raiszadeh K; USA
- 14.07-14.12 24 Defining clinically-relevant values for developmental spinal stenosis: a large scale MRI study
Cheung JPY, Samartzis D, Shigematsu H, Cheung KMC; China, Japan
- 14.14-14.19 25 Patient-rated outcome of spinal fusion in geriatric patients (> 80 years of age) with lumbar degenerative spondylolisthesis: Does age matter?
Marbacher S, Mannion AF, Burkhardt JK, Schär R, Porchet F, Kleinstück FS, Jeszenszky D, Fekete TF, Haschtmann D; Switzerland
- 14.21-14.30 *Discussion*

WEDNESDAY JUNE 4 continued

SESSION # 5

TOPIC: DEGENERATIVE CHANGES

Moderators: Ashish Diwan and Yong Hai

- 14.30-14.35 26 The correlation of osteoporotic vertebral fracture with spinopelvic sagittal alignment
Choi YS, Kim D, Kim M; Korea
- 14.37-14.42 27 Decreasing Disc Height Affects Lumbar Segmental Lordosis in the Aging Lumbar Spine
Nojiri H, MD, Espinoza Orías AA, Fogg L, Andersson GBJ, An HS, Inoue N; USA
- 14.44-14.49 28 Can pro-inflammatory cytokine gene expression explain multifidus muscle fiber changes after an intervertebral disc lesion?
Hodges PW, James G, Blomster L, Hall L, Schmid A, Shu C, Little C, Melrose J; Australia
- 14.51-15.00 *Discussion*
- 15.00-15.05 29 Leptin and the Intervertebral Disc: A Pro-Inflammatory Environment May Potentiate the Biochemical Effects of Obesity
Segar A, Edwards K, Fairbank F, Urban J; UK
- 15.07-15.12 30 Evaluation of cartilage endplate biochemical composition with ultrashort echo time (UTE) MRI
Fields AJ, Han M, Krug R, Lotz JC; USA
- 15.14-15.19 31 A Phase III, Multicenter, Double-blind, Randomized, Placebo-controlled, Study of Condoliase for the Treatment of Patients with Lumbar Disc Herniation
Chiba K, Matsuyama Y, Toyama Y and the Japanese SI-6603 Study Group; Japan
- 15.21-15.30 *Discussion*

15.30-16.00

COFFEE

SESSION #6

TOPIC: DISC DEGENERATION

Moderators: Jeong-Beom Park and Jill Urban

- 16.00-16.05 32 Physical Limitations to Tissue Engineering of Intervertebral Disc Cells Using Growth Factors. Effect of Bone Morphogenetic Protein (BMP)-7 and Fibroblast Growth Factor (FGF)-2 on Glycosaminoglycan Production and Cell Metabolism
Kobayashi S, Takeno K; Japan
- 16.07-16.12 33 Diffusion properties of Human Annulus Fibrosus
Naresh-Babu J ReshmaBegum SK, Neelima G, AdinarayanaRao M, SivaLeela V; India

WEDNESDAY JUNE 4 continued

- 16.14-16.19 34 The Effect of Capacitively Coupled (CC) Electrical Stimulation on Human Intervertebral Disc Cells and the Relationship between CC and BMP
Wang Z, Hutton WC, Yoon ST; USA
- 16.21-16.26 35 Lumbar disc degeneration progression in young adults in their 20's
Makino H, Kawaguchi Y, Nakano M, Yasuda T, Seki S, Kimura T;
Japan
- 16.28-16.40 *Discussion*
- 16.40-17.40 **SYMPOSIUM 1: Registries or RCTs-Which Approach is "Best" for Answering our Clinical Questions?**
Moderator: Peter Robertson
- 16:40-16:50 Perspective: Registries - *Wilco Jacobs, The Netherlands*
- 16:50-17:00 Perspective: RCTs - *Peter Fritzell, Sweden*
- 17:00-17:10 Lessons Learned from SPORT - *Jon Lurie, USA*
- 17:10-17:20 Role of ICHOM in Outcomes Research – *Jeremy Fairbank, UK*
- 17:20-17:30 What does it all mean to the researcher? - *Anne Mannion, Switzerland*
- 17:30-17:40 *Discussion*
- 17:40- **FIRST BUSINESS MEETING**

THURSDAY JUNE 5

SESSION # 7

07.45-08.45

SPECIAL EMPHASIS POSTER SESSION #1

SESSION # 8

TOPIC: BIOLOGY AND DEGENERATION

Moderators: Michele Battié and Shinichi Kikuchi

- 09.00-09.05 36 Healing of the bone-bone interface in lumbar intervertebral disc allograft transplantation in a goat model
Huang Y-C, Xiao J, Lu WW, Leung VYL, Luk KDK; China
- 09.07-09.12 37 Endplate Compressive and Permeability Properties are Altered by Degeneration and Disc Location
DeLucca JF, Cortes DH, , Jacobs NT, Duncan RL, Elliott DM; USA
- 09.14-09.19 38 Vertebral endplate porosity reflects mechanical loading in old and degenerated discs
Zehra U, Robson-Brown K, Adams MA, Dolan P; UK

THURSDAY JUNE 5 continued

- 09.21-09.30 *Discussion*
- 09.30-09.35 39 Do macroscopic and microscopic assessments of intervertebral disc degeneration reflect changes in disc function?
Zehra U, Noel-Barker N, Marshall J, Adams MA, Dolan P; UK
- 09.37-09.42 40 Lumbar Disc and Facet Joint Degeneration: A longitudinal in vivo study
Nojiri H, MD, Espinoza Orías AA, Fogg L, Andersson GBJ, An HS, Inoue N; USA
- 09.44-09.49 41 Effect of anti-bFGF neutralizing antibody on neuropathic pain induced by spinal nerve ligation in rats
Fujimaki H, Inoue G, Uchida K, Sekiguchi H, Ueno M, Saito W, Takahira N, Takaso M; Japan
- 09.51-10.00 *Discussion*
- 10.00-10.30 **COFFEE**
- SESSION #9** **TOPIC: LOW BACK PAIN:**
Moderators: Kenneth Cheung and Robert Gunzburg
- 10.30-10.35 42 Where Do Smokers Hurt? A Comprehensive Body-Wide Analysis of Pain Reveals Smoking is Most Associated with Back Pain.
Smuck M, Thomkins-Lane C, Kao M-C; USA
- 10.37-10.42 43 Workaholism as a risk factor for depression and disabling back pain among Japanese workers
Matsudaira K, Sawada T, Kikuchi N, Sato E, Suzuki M; Japan
- 10.44-10.49 44 Limits of high field MRI for the detection of intervertebral disc lesions – a comparison between 11.7 T and 3 T
Berger-Roscher N, Galbusera F, Rasche V, Wilke H-J; Germany, Italy
- 10.51-11.00 *Discussion*
- 11.00-11.40 **HARRY FARFAN PRESIDENTIAL LECTURE**
Introduction – Jeremy Fairbank

Guest Speaker – Irene Tracey, MA (Oxon), D.Phil (PhD), FRCA
Nuffield Department of Clinical Neurosciences
Title: How Advanced Neuroimaging Studies of Pain and Analgesia in Humans Informs Clinical Practice
- 11.40-12.20 **PRESIDENTIAL ADDRESS – JEREMY FAIRBANK**
Introduction – Tom Oxland

AFTERNOON OUTING

FRIDAY JUNE 6

SESSION #10

TOPIC: OUTCOMES

Moderators: Markus Melloh and S Rajasekaran

- 07.30-07.35 45 Long-Term Results of Total Lumbar Disc Replacement: A Prospective Analysis with 5-10 Year Follow-Up
Siepe CJ, Wiechert K, Heider F, Korge A, Mehren C, Mayer HM; Germany
- 07.37-07.42 46 Single level lumbar fusion in worker's compensation subjects for degenerative disc disease is associated with lower return to work rates compared to fusion for spondylolisthesis
Anderson JT, Duff RJ, Ahn UM, Ahn NU; USA
- 07.44-07.49 47 Universal No Fault Compensation is associated with Improved Return to Work Rates in Spine Fusion
Manson JF, Montgomery AS, Cunningham JE, Landham PR, Don AS, Robertson PA; New Zealand
- 07.51-07.56 48 The association between morphological stenosis grade and the outcome of surgery for lumbar spinal stenosis
Mannion AF, Fekete T, Luca A, Schizas C; Switzerland
- 07.58-08.03 49 Preoperative Pain Pattern Predicts Surgical Outcome more than Type of Surgery in Patients with Central Spinal Stenosis without Concomitant Spondylolisthesis
Sigmundsson FG, Jönsson B, Strömqvist B; Sweden
- 08.05-08.20 *Discussion*

SESSION #11

TOPIC: ANALYSIS OF PHYSIOLOGY AND PSYCHOLOGY

Moderators: David Hall and Shinichi Konno

- 08.22-08.27 50 Use of lumbar discography is associated with significantly lower return to work rates after lumbar fusion in worker's compensation subjects
Anderson JT, Duff RJ, Ahn UM, Ahn NU; USA
- 08.29-08.34 51 Prospective Analysis of Risk Factors for Proximal Junctional Failure in Adult Deformity Patients
Hart R, Hamilton KD, Hiratzka J, Bess S, Schwab F, Shaffrey C, Ames C, Lafage V, Mummaneni PV, Smith JS, Klineberg E, McCarthy I, Burton D, Hostin R, Study Group, International Spine; USA
- 08.36-08.41 52 Discography and axially loaded MRI in the provocation of discogenic pain - a comparative pilot study
Hebelka H, Hansson T; Sweden

FRIDAY JUNE 6 *continued*

- 08.43-08.48 53 Analysis of vascular patterns for the posterior elements of the lower lumbar spine
Tezuka F, Sakai T, Nishisho T, Takata Y, Goda Y, Higashino K, Takao S, Harada M, Sairyo K; Japan
- 08.50-09.02 *Discussion*
- SESSION #12** **GENERAL POSTER SESSION, ODD NUMBERS**
09.10-09.40
- SESSION #13** **GENERAL POSTER SESSION, EVEN NUMBERS**
09.40-10.10
- 10.10-10.40 **COFFEE**
- SESSION # 14** **FELLOWSHIP AWARD CEREMONY**
Moderator: Tom Oxland
- 10.40-11.00 Introduction of Fellowships – Michelle Battié
- Announcement MacNab/LaRocca Fellowship for 2014
MacNab LaRocca Fellowship Report 2013
Recipient – International Disc Degeneration Consortium: Dino Samartzis et al
- Announcement of Globus Fellowship for 2014
Globus Fellowship Report 2013 Recipient - Tie Liu, China
- Presentation of Spine Young Investigators Award**
Titles: In vivo MRI measurement of spinal cord displacement in the thoracolumbar region of asymptomatic subjects: Part 1 - straight leg raise test.
In vivo MRI measurement of spinal cord displacement in the thoracolumbar region of asymptomatic subjects: Part 2 - comparison between unilateral and bilateral straight leg raise tests
Marinko Rade, Kuopio, Finland
- SESSION # 15** **THE ISSLS PRIZE PAPERS**
Sponsored by DePuy Synthes Spine
- 11.00-11.10 Introduction and Award Ceremony - Dr Gunnar Andersson
- 11.10-11.20 54 **ISSLS PRIZE – CLINICAL**
Long-term follow up suggests spinal fusion is associated with increased adjacent segment disc degeneration but without influence on clinical outcome. Results of a combined follow-up from 4 RCTs
Mannion AF, Leivseth G, Brox J-I, Fritzell P, Hägg O, Fairbank JCT; Switzerland, Norway, Sweden, UK

FRIDAY JUNE 6 *continued*

- 11.20-11.30 *Discussion*
- 11.30-11.40 55 **ISSLS PRIZE – BIOMECHANICS**
 Mechanical influences in progressive intervertebral disc degeneration
Stefanakis M, Luo J, Pollintine P, Dolan P, Adams MA; UK, Cyprus
- 11.40-11.50 *Discussion*
- 11.50-12.00 56 **ISSLS PRIZE – BIOLOGY**
 Increased Innervation and Sensory Nervous System Plasticity in a Mouse Model of Low Back Pain due to Intervertebral Disc Degeneration
Miyagi M, MD, Millecamps M, Danco AT, Ohtori S, Takahashi K, Stone LS; Canada, Japan
- 12.00-12.10 *Discussion*
- 12.10-13.30 **LUNCH**
- SESSION #16** **TOPIC: PHYSIOLOGY**
 Moderators: Margareta Nordin and Dino Samartzis
- 13.30-13.35 57 Correlation between biomechanical properties of annulus fibrosus and magnetic resonance findings
Shan Z, Zhao F, Wang C, Liu J, Suyou L, Fan S; China
- 13.37-13.42 58 Biomechanical Evaluation of the Transpedicular Nucleotomy with Intact Anulus Fibrosus
Russo F, Vadala G, Hartman RA, Bell KM, Sowa GA, Vo N, Denaro V, Kang JD; Italy, USA
- 13.44-13.49 59 Does daily teriparatide enhance the healing process of osteoporotic vertebral fracture?
Iwata A, Kanayama M, Shigenobu K, Oha F, Onda S, Tanaka M, Hashimoto T, Iwasaki N; Japan
- 13.51-14.00 *Discussion*
- 14.00-14.05 60 Usefulness of “One Stretch”, a simple, daily, standing back extension exercise, for the prevention of onset or aggravation of low back pain in care workers
Suzuki M, Matsudaira K, Sawada T, Sato E, Isomura T; Japan
- 14.07-14.12 61 Persistent Racial and Economic Disparities in Physical Therapy Referral for Low back Pain Patients in Primary Care
Smuck M, Zheng P, Karayannis N, Kao M-C; USA

FRIDAY JUNE 6 *continued*

- 14.14-14.19 62 Assessment of Neuroforaminal Area of the Lumbar Spine During Flexion-Extension Motion
*Havey R, Muriuki M, Carandang G, Voronov L, **Patwardhan A**; USA*
- 14.21-14.30 *Discussion*
- INVITED LECTURE #2**
Moderator: Sally Roberts
- 14.30-14.50 Disc Mechano-Biology
Cornelia Neidlinger-Wilke, Germany
- 14.50-15.00 *Discussion*
- SESSION # 17** **TOPIC: QUALITY OF LIFE AND INFECTION**
Moderators: Richard Guyer and Kotaro Nishida
- 15.00-15.05 63 HRQoL Scores and Radiographic Parameters Do Not Drive Patient Satisfaction after Adult Spinal Deformity Surgery
Hamilton DK, Hiratzka J, Bess S, Schwab F, Shaffrey CI, Ames C, Mundis G, Lafarge V, Deviren V, Smith J, Klineberg E, Adjei OB, Burton D, Hart R; USA
- 15.07-15.12 64 Surgical Indication in Degenerative Lumbar Spinal Disease Based on Health Related Quality of Life: Multi-Center Prospective Outcome Based Analysis
*Lee H-M, Suk K-S, Yang J-H, Kim S-Y, Lee B-H, Kim J-H, Kim H-S, Park M-S, Park S-E, **Moon S-H**; Korea*
- 15.14-15.19 65 Ultrasonic waves remove a bacterial biofilm on implant surface and prevent the implant-associated infection
Yoshioka K, , Ishii K, Nagai S, Kakinuma Y, Sasaki A, Aizawa M, Okada Y, Koyasu S, Toyama Y, Matsumoto M; Japan
- 15.21-15.30 *Discussion*
- 15.30-16.00 **COFFEE**
- SESSION #18** **TOPIC: IMAGING**
Moderators: Matthew Smuck and
- 16.00-16.05 66 A large-scale study of Modic changes in the lumbar spine: morphology and association with MRI phenotypes
Määtä J, Cheung KMC, Karppinen J, Samartzis D; China, Finland
- 16.07-16.12 67 Prediction of future first-time low back pain based on baseline MRI findings
Samartzis D, Karppinen J, Luk KDK, Cheung KMC; China, Finland

FRIDAY JUNE 6 continued

- 16.14-16.19 68 MRI features of the psoas muscles in patients with paraspinal muscle atrophy
Kita T, Takayama K, Nakamura H, Kanematsu F, Yasunami, T Ikeda S, Yamamoto K, Ueyama H, Hori Y, Sakanaka H, Yamano Y; Japan
- 16.21-16.26 69 Comprehensive Analysis of MRI-phenotypes Provides New Insights into Lumbar Disc Degeneration for Genetic Studies
Li Y, Samartzis D, Campbell D, Cheung KMC, Luk KDK, Karppinen J, Cheah K, Chan D, Sham P; China, Finland
- 16.28-16.40 *Discussion*
- 16.40-17.20 **SYMPOSIUM #2: Should we be treating our patients with antibiotics for Modic I changes and chronic low back pain?**
Moderator: David Wong
- 16.40-16.55 Basic Science/MR Imaging of Modic Changes – *Yue Wang, China*
- 16.55-17.10 Clinical Perspective: Evidence/Pro's and Con's of Modic I Antibiotic Treatment: *Jeremy Fairbank, UK*
- 17.10-17.20 *Discussion*
- 17.25- **SECOND BUSINESS MEETING**
ISSLS BANQUET

SATURDAY JUNE 7

- SESSION # 19** **SPECIAL POSTER SESSION #2**
07.45-08.45
- 09.00-09.30 **REPORT OF SPECIAL INTEREST GROUP CHAIRS**
Moderator: Tom Oxland
- SESSION # 20** **TOPIC: SURGICAL OPTIONS AND DECISION MAKING**
Moderators: Tommy Hansson and Jin-Hwan Kim
- 09.32-09.37 70 Surgical interspinous implant versus conventional decompression for lumbar spinal stenosis - a randomized controlled trial
Moojen WA, Arts MP, Jacobs WCH, van Zwet EW, van den Akker-van Marle ME, Koes BW, Vleggeert-Lankamp CLAM, Peul WC; The Netherlands

SATURDAY JUNE 7 *continued*

- 09.39-09.44 71 Surgical versus Non-Operative Treatment for Lumbar Spinal Stenosis
Lurie JD, Tostenson TD, Tosteson ANA, Zhao W, Morgan TS, Abdu WA, Herkowitz H, Weinstein JN; USA
- 09.46-09.51 72 What leads to surgical decision in degenerative lumbar stenosis in the preference-based, shared decision?
Kim H-J, Park J-Y, Kan K-T, Chang B-S, Le C-K, Yeom JS; South Korea
- 09.53-09.58 73 Clinical depression: a predictor of poor return to work rates among worker's compensation subjects following lumbar fusion
Anderson JT, Duff RJ, Ahn UM, Ahn NU; USA
- 10.00-10.12 *Discussion*
- 10.12-10.40 **COFFEE**
- 10.40-11.00 **INVITED LECTURE #3**
Moderator: David Wong
- Status of disc arthroplasty - *Richard Guyer, USA*
- 11.00-11.10 *Discussion*
- SESSION #21** **TOPIC: SURGICAL FACTORS**
Moderators: Wilco Jacobs and Keith DK Luk
- 11.10-11.15 74 The assessment of patient-rated outcome in spinal stenosis: could less be more?
Mannion AF, Fekete T, Kleinstück F, Jeszenszky D, Wertli M, Porchet F in collaboration with the Lumbar Stenosis Outcome Study (LSOS) group; Switzerland
- 11.17-11.22 75 Surgical Outcome of Lumbar Spinal Stenosis: 10 years prospective follow-up
Tuomainen I, Aalto T, Vanhanen S, Pakarinen M, Sinikallio S, Leinonen V, Herno A, Kröger H, Turunen V, Savolainen S, Miettinen H, Airaksinen O; Finland
- 11.24-11.29 76 Relationship between lumbar spinal stenosis and psychosocial factors - A multicenter cross-sectional study (DISTO-project)
Sekiguchi M, Yonemoto K, Kakuma T, Nikaido T, Watanabe K, Kato K, Otani K, Yabuki S, Kikuchi S, Konno S; Japan
- 11.31-11.36 77 Age Associated Relative Risk Increase for In-Hospital Mortality and Complications Following Lumbar Spine Surgery
Hassanzadeh H, Nandyala SV, Marquez-Lara A, Singh K; USA

SATURDAY JUNE 7 continued

11.38-11.50 *Discussion*

SESSION # 22

TOPIC: SPONDYLOLISTHESIS AND STENOSIS

Moderators: Kazuhiro Hasegawa and Jon Lurie

11.50-11.55 78 Lumbar degenerative spondylolisthesis is not always unstable - a clinico-biomechanical evidence

Hasegawa K, Kitahara K, Shimoda H, Ishii K, Homma T; Japan

11.57-12.02 79 Surgical versus Non-Operative Treatment for Lumbar Degenerative Spondylolisthesis: Eight-Year Results of the Spine Patient Outcomes Research Trial (SPORT)

Lurie JD, Tosteson TD, Tosteson ANA, Zhao W, Morgan TS, Abdu WA, Herkowitz H, Weinstein JN; USA

12.04-12.09 80 Linking Parity, History of Abdominal Surgery, and Trunk Muscle Function to Degenerative Spondylolisthesis in Older Women

Cholewicki J, Lee A, Popovich Jr. JM, Mysliwiec LW, Winkelpleck MD, Flood JN, Pathak PK, Kaaikala, KH, Reeves NP, Kothe R; USA, Germany

12.11-12.16 81 Clinical Outcome of Decompressive Surgery for Lumbar Epidural Lipomatosis

Haschtmann D, Ferlic P, Kleinstück FS, Porchet F, Mannion A, Jeszenszky D, Fekete TF; Switzerland

12.18-12.30 *Discussion*

12.30-12.40

ANNOUNCEMENT - BEST PAPER AND POSTER AWARDS

Moderator: David Wong

Closing Remarks – Robert Gunzburg

SPECIAL POSTER SESSION #1

Thursday, June 5, 2014 at 07:45 – 08:45

A. HERNIATED DISC / STENOSIS

Moderators: Chang-Hoon Jeon and Christoph Siepe

- SP1 Reoperation Rate After Microdiscectomy for the Treatment of Lumbar Disc Herniation: Long-term Follow-up After an Average of 10.8 Years
Aichmair A, Du JY, Shue J, Evangelisti G, Sama AA, Hughes AP, Lebl DR, Cammisa FP, Girardi FP; USA, Italy
- SP2 Analysis of Internet Information on the Controversial X-Stop Device
Anderson JT, Sullivan TB, Ahn UM, Ahn NU; USA
- SP3 A Prospective Comparative Study of Two Different Minimally-Invasive Procedures for Lumbar Spinal Canal Stenosis - Unilateral Laminotomy for Bilateral Decompression (ULBD) versus Muscle-preserving Interlaminar Decompression (MILD)
Arai Y, Hirai T, Yoshii T, Shinomiya K, Takahashi M, Kawabata S, Enomoto M, Kato T, Tomizawa S, Sakai K, Okawa A
- SP4 Epidemiological study of Lumbar Spinal Stenosis: Six-year follow-up in the community
Otani K, Kikuchi K, Yabuki S, Nikaido T, Watanabe K, Kato K, Konno S; Japan
- SP5 Night Leg Cramp and Lumbar Spinal Stenosis
Handa J, Otani K, Nikaido T, Kikuchi S, Konno S; Japan
- SP6 Evolution of spinal canal dimensions in Switzerland. A narrowing epidemic?
Schizas C, Schmit A, Schizas A, Becce F, Kulik G, Pierzchala K; Switzerland

B. COMPLICATIONS

Moderators: Helena Brisby and Katsuhiko Sato

- SP7 The Role of BMI in Matrix Delamination during Intervertebral Disc Degeneration
Meisel H-J, Friedmann A, Schwan S, Heilmann A, Goehre F; Germany
- SP8 Cerebral Vascular Accidents following Lumbar Spine Fusion Surgery
Marquez-Lara A, Nandyala SV, Fineberg SJ, Singh K; USA
- SP9 De novo post-operative neuropathic pain in lumbar spinal surgery
Cho YE, Whang C-J, Suk K-S, Lee B-H, Kim J-H, Park M-S, Yang J-H, Kim S-Y, Lee H-M, Moon S-H; Korea

- SP10 Indirect effects of decompression surgery on glycemic homeostasis in patients with type 2 diabetes mellitus and lumbar spinal stenosis: Preliminary results
Kim H-J, Cho H-G, Yi J-M, Lee K-W, Chang B-S, Lee C-K, Yeom JS; South Korea
- SP11 Classification of chronic back muscle degeneration after spinal surgery and its relationship to low back pain
Ohtori S, Orita S, Yamauchi K, Eguchi Y, Aoki Y, Miyagi M, Suzuki M, Sakuma Y, Kubota G, Oikawa Y, Inage K, Sainoh T, Sato J, Fujimoto K, Inoue G, Toyone T, Takahashi K; Japan
- SP12 The type of metal, local antibiotics or prophylactic IV antibiotics, what influences Postoperative Spine infections with MRSA the most?
Gupta S, Maitra S, Graca M, Wetpiriyakul P, Gupta K, Durbin-Johnson B, Gupta M; USA

C. NERVE / CELL BIOLOGY I

Moderator: Jaro Karppinen and Ki-Won Kim

- SP13 Dose dependent nerve inflammation of rhBMP-2 in a rodent spinal nerve model
Qiang Glen LZ, Moon Lam RW, Hu T, Toh SY, Wong H-K; Singapore
- SP14 Nutrient deprivation modulates cell fate—autophagy, apoptosis, and senescence—and extracellular matrix homeostasis in intervertebral disc cells
Yurube T, Buchser WJ, Hartman RA, Pohl PPI, Lotze MT, Vo NV, Sowa GA, Kang JD; Japan and USA
- SP15 Molecular Effects of Bone Morphogenetic Protein 13 on Intervertebral Disc Cells
Gulati T, Wei A, Chung S, Diwan AD; Australia
- SP16 The Effect of Nervous System Activation by Pain Stimulus of Capsaicin Injection to Intervertebral Disc
Nishiori H, Yamauchi K, Sakuma Y, Oikawa Y, Inage K, Kubota G, Saino, K, Suzuki M, Nakata Y, Sato J, Arai S, Takahashi K, Ohtori S, Orita S; Japan
- SP17 Up-regulation of NaV1.7 in dorsal root ganglia after intervertebral disc injury in rats
Sadamasu A, Sakuma Y, Suzuki M, Orita S, Yamauchi K, Inoue G, Aoki Y, Ishikawa T, Miyagi M, MD, Kamoda H, Kubota G, Oikawa Y, Inage K, Sainoh T, Saro J, Nakamura J, Tomoaki T, Takahashi K, Ohtori S; Japan
- SP18 Abnormal cell metabolism in degenerated intervertebral discs: a response to focal damage and swelling?
Lama P, Le Maitre C, Dolan P, Tarlton J, Harding IJ, Adams MA; UK

D. DEFORMITY

Moderators: Serena Hu and Kazuhisa Takahashi

- SP19 Stiffness after Fusion for Adult Spinal Deformity Does Not Significantly Impact Patients' Functional Status or Satisfaction
*Hiratzka J, **Hamilton DK**, Bess S, Schwab F, Shaffrey C, Ames C, Mundis G, Lafage V, Deviren V, Smith J, Klineberg E, Boachie-Adjei O, Burton D, Hart R, Study Group, International Spine; USA*
- SP20 Risk factors for floating segment degeneration in adults after long segment fusion unto the lumbar spine.
Cho W, Pawar A, Lee A, Faloon M, Cunningham M, Rawlins B, Boachie-Adjei O; USA
- SP21 Sagittal spinal alignment of diffuse idiopathic skeletal hyperostosis in lumbar spinal stenosis
Yamada K, Toyoda H, Terai H, Takahashi S, Nakamura H; Japan
- SP22 Relationship between spinal loads and physiological variations of the lumbar sagittal alignment: a numerical study
*Galbusera F, Brayda-Bruno M, **Wilke H-J**; Italy, Germany*
- SP23 Progressive pattern of vertebral deformity in a population-based cohort study of vertebral fracture
Kato T, Akeda K, Murata K, Takegami N, Nishimura A, Kato K, Sudo A; Japan
- SP24 Clinical outcome after lumbar decompression surgery was not associated with preoperative sagittal alignment
Hikata T, Watanabe K, Fujita N, Iwanami A, Hosogane N, Ishii K, Nakamura M, Toyama Y, Matsumoto M; Japan

E. LOW BACK PAIN I

Moderators: Chris Colloca and Dawn Elliott

- SP25 Shear modulus of the human nucleus pulposus measured using MR Elastography correlates with directly measured mechanical properties
*Cortes DH, DeLucca JF, Magland JF, Wright AA, **Elliott DM**; USA*
- SP26 Biomechanical analysis of the influence of intervertebral disc degeneration on the lumbar spine
*Park WM, Choi DK, Kim K, **Kim YH**; Korea*
- SP27 Escape-Avoidance coping strategy for psychosocial stress is associated with chronic low back pain in college students: a prospective cohort study
Kato K, Sekiguchi M, Nikaido T, Otoshi K, Matsuo Y, Kikuchi S, Konno S; Japan

- SP28 Does the change of weather condition influence pain level of symptoms in the patients with lumbar spine diseases?
Ishii K, Hosogane N, Hikata T, Yoshioka K, Shiono Y, Iida T, Ozaki M, Ishihama H, Horiuchi Y, Takahashi Y, Furukawa M, Nagoshi S, Shingo I, Okada E, Kaneko Y, Yuichiro T, Fujita N, Kato H, Daisuke I, Kaneko S, Watanabe K, Kentaro F, Kohno H, Kamata M, Koyanagi T, Nakamura M, Nishiwaki Y, Toyama Y, Matsumoto M; Japan
- SP29 The significance of pain catastrophizing in the clinical manifestations of patients with lumbar spinal stenosis: Mediation analysis with bootstrapping
Kim H-J, Cho C-H, Kang K-T, Chang B-S, Lee C-K, Yeom JS; South Korea
- SP30 Clinical Effectiveness of Two-Level Transforaminal Epidural Steroid Injections: A Sub-Group Analysis
Christolias GC, Singh JR; USA

SPECIAL POSTER SESSION #2

Saturday, June 7, 2014 at 07:45-08:45

F. CELL BIOLOGY II

Moderators: Scott Blumenthal and Seong-Hwan Moon

- SP31 Evaluation of the correlation among the expression of inflammatory cytokines, degeneration of the intervertebral disc, and prominent symptoms in degenerative human lumbar intervertebral discs
Sainoh T, Orita S, Yamauchi K, Kubota G, Inage K, Sato J, Fujimoto K, Shiga Y, Arai S, Takahashi K, Ohtori S; Japan
- SP32 Tissue Engineered intervertebral disc (IVD) with either poly e-caprolactone (PCL) or poly(e-caprolactone-co-lactide (PLCL) nanofiber
Chuah YJ, Kang YJ, Tak HH; Singapore
- SP33 High Glucose-induced Oxidative Stress Accelerates the Premature Stress-induced Senescence of Rat Notochordal Cells through Mitochondrial Damage
Park JB, Park E-Y; Korea
- SP34 Transcriptional changes in nucleus pulposus intervertebral disc cells due to high osmolality, as revealed by cDNA microarray analysis
Mavrogonatou E, Papadopoulos V, Urban J, Kletsas D; Greece, Canada, UK
- SP35 Quantitative detection of proteoglycan in intervertebral disc by iTIP gagCEST
Ling W, Hartman R, Nicholls F, Jin T, Vo N, Sowa S, Modo M, Ty Bae K, Kang J; UK
- SP36 How long should teriparatide be used to accelerate lumbar posterolateral fusion in women with postmenopausal osteoporosis?
Ohtori S, Orita S, Yamauchi K, Eguchi Y, Aoki Y, Miyagi M, Suzuki M, Sakuma Y, Kubota G, Oikawa Y, Inage K, Sainoh T, Sato J, Fujimoto K, Inoue G, Toyone T, Takahashi K; Japan

G. LOW BACK PAIN II

Moderators: Yoshiharu Kawaguchi and Koji Otani

- SP37 Biomechanical effect of the progression of lower lumbar disc degeneration on adjacent discs.
Natarajan RN, Andersson GBJ; USA
- SP38 Efficacy of Transforaminal Epidural Steroid Injection according to Nerve Roots Enhancement
Tak HJ, Cho HK, Cho YW, Ahn SH; Korea
- SP39 Influence of educational attainment and catastrophizing on pain intensity and disability in patients with lumbar spinal stenosis – mediation analysis with bootstrapping
Kim H-J, Kim S-C, Kang K-T, Chang B-S, Lee C-K, Yeom JS; South Korea

- SP40 The influence of asymptomatic stenosis on five-year results of selective decompression of only symptomatic levels for lumbar spinal stenosis
Watanabe K, Otani K, Nikaido T, Kato K, Yabuki S, Kikuchi S, Konno S; Japan
- SP41 The Impact of Diabetes Mellitus in Surgical Outcomes after Lumbar Spine Surgery
Marquez-Lara A, Nandyala SV, Fineberg SJ, Singh K; USA
- SP42 Comparison of Peri-operative Outcomes for Lumbar Decompression: Orthopaedic Surgery Versus Neurosurgery
Marquez-Lara A, Nandyala SV, Fineberg SJ, Singh K; USA

H. FUSION

Moderators: Kee-Yong Ha and Jeff Lotz

- SP43 Effect of Physiologic Loads on Cortical and Traditional Pedicle Screw Fixation
Baluch D, Patel A, Lullo B, Havey RM, BS Vorono LI, Nguyen N-L, Carandang G, Ghanayem AJ, Patwardhan AG; USA
- SP44 The Role of BMP-2 on Postoperative Fusion and Subsidence Rates after Lateral Lumbar Interbody Fusion: A Cohort Controlled Study
Aichmair A, Lykissas MG, Kiely PD, Hughes AP, Sama AA, Lebl DR, Cammisa FP, Girardi FP; USA
- SP45 The pullout strength of pedicle screws following re-direction after lateral wall breach or end-plate breach
Goda Y, Higashino K, Toki S, Suzuki D, Kobayashi T, Matsuura T, Fujimiya M, Yasui N, Hutton WC, Sairyo K; Japan and USA
- SP46 Can bone mineral density affect intra-operative estimated blood loss of mini-invasive
Zhao F, He Y, Chen H, Shan Z, Suyou L, Fan S; China
- SP47 Preoperative Facet Effusion Correlates with Cranial Adjacent Segment Instability
Ushiku C, Soshi S, Inoue T, Kida Y, Shinohara A, Hashimoto K, Ishizuka R, Marumo K; Japan
- SP48 A randomized controlled trial of lumbar posterolateral fusion in combination with platelet-rich plasma (PRP)
Kubota G, Kamoda H, Yamauchi K, Orita S, Sakuma Y, Oikawa Y, Inage K, Sainoh T, Sato J, Fujimoto T, Takahashi K, Arai S, Ohtori S; Japan

I. DEGENERATIVE DISC DISEASE (DDD) / BIOMECHANICS

Moderator: Bong-Soon Chang and Gen Inoue

- SP49 Change in the position of the spinal nerve relative to the spine with diffusion tensor tractography
Oikawa Y, Eguchi Y, Watanabe A, Orita S, Yamauchi K, Sakuma Y, Kubota G, Inage K, Sainoh T, Sato J, Fujimoto K, Arai D, Suzuki M, Takahashi K, Ohtori S; Japan
- SP50 Mechanobiology of complex loading in functional spinal units: Flexion/extension with combined torsion
Hartman RA, Ngo K, Yurube T, Schneider MJ, Debski RE, Kang JD, Sowa GA; Pittsburgh, PA, USA

- SP51 Bioactive pedicle screws produced by chemical and heat treatments have improved biocompatibility and bone-bonding ability
Akeda K, Murata K, Takegami N, Matsushita T, Yamaguchi S, Kokubo T, Goto M, Matsumine A, Uchida A, Sudo A; Japan
- SP52 The distribution of bone mass in the lumbar vertebrae: Are we measuring the right target?
Wang Y, Videman T, Boyd SK, Battié MC; China, Canada
- SP53 Reproducible disc degeneration scale in a large animal model
Vadala G, Russo F, De Strobel F, Bernardini M, De Benedictis G, Musumeci M, Eglin D, Denaro L, Alini M, Denaro V; Italy, Switzerland
- SP54 A Prospective study of Correlation between clinical disability and radiological features in degenerative lumbar canal stenosis (LCS)
Rajasekaran S, Kannippan N, Kanna RM, Shetty AP; India

J. IMAGING

Moderators: Josef Assheuer and Jun-Seok Lee

- SP55 Do unilateral Modic type III changes on coronal MRI indicate the symptomatic level of the foramen in patients with lumbar foraminal stenosis?
Fujiwara Y, Kotaka S, Izumi B, Manabe H; Japan
- SP56 Pathognomonic radiological indicators for diagnosis of lumbosacral foraminal stenosis
Shinozaki Y, Ishii K, Takahashi Y, Nishida M, Nakashima D, Toyama Y, Matsumoto M, Ogawa J; Japan
- SP57 Radiographic evaluation of the facet joint preservation and postoperative bone re-growth in microscopic bilateral decompression via a unilateral approach for degenerative lumbar disease. – Minimum five-year follow-up -
Dohzono S, Toyoda H, Terai H, Suzuki A, Yasuda H, Shinohara Y, Tamai K, Nakamura H; Japan
- SP58 Endoscopic lumbar foraminotomy: Postoperative changes of foraminal parameters on magnetic resonance image
Ahn Y, Oh H-K, Lee, S-H, Kim H; Korea
- SP59 CT Exposure and Energy Effects on Bone Mineral Density Estimation from Calibration Phantoms
Giambini H, Nassr A, Huddleston PM, Dragomir-Daescu D, An K-N; USA
- SP60 Association between endplate signal change and Schmorl's nodes with disc degeneration in the lumbar region and low back pain in a population-based cohort in Japan: The Wakayama Spine Study
Teraguchi M, Yoshimura N, Hashizume H, Muraki S, Yamada H, Oka H, Minamide A, Ishimoto Y, Nagata K, Kagotani R, Akune T, Yoshida M; Japan

GENERAL POSTERS

- GP1 Biomechanical evaluation of kinematic behavior and load sharing of a pedicle-based sliding rod fixation
Zhu Q, Lin Z, Huang Z, Chen J; China
- GP2 Stabilization of the Lumbar Spine in various 3-D Postures by Spinal Muscle Contraction Pattern creating Compressive Follower Load
Wang T, Lim T-H; USA
- GP3 The correlation between cage subsidence, bone mineral density, and clinical results in posterior lumbar interbody fusion
Oh KW, Lee J Hyep, Lee J Ho, Lee DY, Lee YS, Lee CK, Chang BS; Korea
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- GP8 Anatomical background of “pseudosciatica” in cluneal neuralgia
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- GP10 Stress analysis in osteoporotic lumbar vertebra with micro-scaled beam-shell trabecular-cortical structure: A finite element analysis
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- GP11 Biomechanical analysis of combined motion exercise in the lumbar spine
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- GP13 Effect of ligature pretension in interspinous process surgery
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- GP14 The relationship of the frontal plane trunk and pelvic motion during gait and the radiographic spinopelvic measurements of patients with a unilateral completely dislocated hip
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- GP15 Transforming Growth Factor- β block the contribution of ADAMTS-1 to intervertebral disc degeneration through the SMAD/MAPK Pathway: A possible degeneration Reparative way?
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- GP16 PLIF Expandable Cages Effectively Stabilize the Spine Better than TLIF Cage
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- GP18 Postural activity of the psoas major and quadratus lumborum muscles is less precisely controlled in people with recurring back pain
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- GP19 The effects of neuromuscular electrical stimulation (NMES) on change in thickness of deep trunk muscles in patients with low back pain.
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- GP21 The relation between experimental pain and spinal stiffness - a pilot study
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- GP23 Infrared thermography in spatial evaluation of back muscle activity
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- GP25 In-vitro biomechanical implications of a bilateral pars interarticularis defect: Do we need a different spinal implant?
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- GP27 Can in vitro biomechanics explain the degeneration of adjacent segments? -A systematic analysis-
*Volkheimer D, Malakoutian M, Oxland TR, **Wilke H-J**; Germany and Canada*
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- GP30 Preclinical evaluation of posterior spinal fixators
***La Barbera L**, Galbusera F, Villa T, Costa F, Kienle A, Graf N, Wilke H-J; Italy and Germany*
- GP31 Injectable Hydrogel Treatment Stabilizes Human Disc Range of Motion Under Physiologic Cyclic Loading
*Showalter BL, **Elliott DM**, Malhotra NR; USA*
- GP32 Stress concentration depends on defect orientation in biaxial tension of fiber-reinforced tissue
*Peloquin JM, **Elliott DM**; USA*
- GP33 Spine function before and after two weeks of soft lumbar bracing
***Kawchuk G**, Edgecombe T, Wong A, Funabashi M, Cojocar A, Prasad N; Canada*
- GP34 Biomechanical Rationale for Variations in the Prevalence of Low Back Pain and Schmorl's Nodes Found in Different Patterns of Multi-Level Disc Degeneration
*Von Forell GA, Stephens TK, Nelson TG, **Samartzis D**, Bowden AE; USA and China*
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*Malakoutian M, Volkheimer D, Street J, Dvorak MFS, Wilke H-J, **Oxland TR**; Canada and Germany*
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***Yoon C**, Kim KW, Kim HC, Chung SG; Korea*
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*Szpalski M, Fabeck LG, Gunzburg R, **Colloca CJ**, McAviney J, Afifi M, Freeman BJ; Belgium, USA, Canada and Australia*
- GP39 Up-regulation of pain behavior and glial activity in the spinal cord after sciatic nerve compression and application of nucleus pulposus in rats
***Norimoto M**, Sakuma Y, Yamauchi K, Orita S, Miyagi M, Suzuki M, Kubota G, Oikawa Y, Inage K, Sainoh T, Sato J, Nakata Y, Takahashi K, Ohtori S; Japan*

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- GP56 In vitro assessment of the proliferative and chemotactic potential of BMP-13 on a chondrocyte cell line
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***Jeon C-H**, Chung N-S, Lee H-D, Seo H-S; Korea*
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- GP109 Vacuum phenomenon of sacroiliac joint: correlation with lumbo pelvic alignment
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- GP111 Efficacy and Safety of Oxycodone/Naloxone in Korean Patients with Chronic Spinal Disorders
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- GP115 Effect of the rocker exercise on the flexibility of the leg and trunk, and on the static balance at standing **Ishigaki N, Aihara T; Japan**
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- GP127 Lumbar spine magnetic resonance (MR) imaging in China: appropriateness and associated factors
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- GP160 Effect of Cervical Laminoplasty on Lower Back Pain
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- GP177 Incidence, Predictors and Outcomes of Pulmonary Embolism after Lumbar Spine Surgery
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- GP178 Outcomes after Lumbar Decompression or Fusion in patients with an Elevated White Blood Cell Count (>10K)
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- GP250 Evaluation of behavior and expression of Nav1.7 in dorsal root ganglia after sciatic nerve compression and application of nucleus pulposus in rats
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