



Scientific Program

This is the scientific program for ISASS14 and is subject to change before the conference. This document is current as of April 24, 2014.

Wednesday, April 30, 2014

8:00 am - 9:45 am - General Session: Deformity: Increasing Treatment Options

Moderator(s): Courtney Brown, MD and Richard Kube, MD

- 8:00 am - 8:04 am **320 ALL Release by Lateral Approach for Anterior Column Reconstruction - Anatomy, Technique and Early Results**
Speaker: [L. Pimenta](#)
Authors: L. Marchi(1,2), R. Jensen(1), R. Amaral(1), T. Coutinho(1), L. Oliveira(1), T. Bueno(1), E. Coutinho(1), L. Pimenta(1,3)
(1)IPC, Sao Paulo, Brazil, (2)UNIFESP, DDI, Sao Paulo, Brazil, (3)UCSD San Diego, Neurosurgery, San Diego, CA, United States
- 8:05 am - 8:09 am **607 Anterior Column Reconstruction Following Minimally Invasive Lateral Approach**
Speaker: [R. Amaral](#)
Authors: R. Amaral(1), T. Coutinho(1), R. Jensen(1), L. Marchi(1), L. Pimenta(1,2)
(1)Instituto de Patologia da Coluna, São Paulo, Brazil, (2)UCSD San Diego, San Diego, CA, United States
- 8:10 am - 8:14 am **250 Correction of Sagittal Profile and Pelvic Parameters with cMIS Techniques for Treatment of Adult Scoliosis**
Speaker: [N. Anand](#)
Authors: N. Anand(1), B. Khandehroo(1), E. Baron(1), S. Kahwaty(1), R.B. Cohen(1), J.E. Cohen(1)
(1)Cedars-Sinai Medical Center, Spine Center, Los Angeles, CA, United States
- 8:15 am - 8:19 am **39 Multi-level XLIF and Posterior Three Column Osteotomies for Three Dimensional Severe Lumbar Deformity— 90 XLIF Levels**
Speaker: [P. McAfee](#)
Authors: P.C. McAfee(1), L. Chotikul(1), E. Shucosky(1)
(1)University of Maryland St Joseph Medical Center, Towson, MD, United States
- 8:20 am - 8:24 am **31 A Cadaveric Study of an Expandable Anteriorly-placed TLIF Device: What's the Effect on Sagittal Correction When Used Alongside Smith-Petersen Osteotomies?**
Speaker: [N. Qandah](#)
Authors: N. Qandah(1), N. Klocke(2), S. Chinthakunta(2), M. Hussain(2), M. Moldovsky(2), E. Marvin(1), J. Synkowski(1), S. Yandamuri(2), K. Salloum(2), B. Bucklen(2)
(1)Neurosurgery/Spine-Carilion, Roanoke, VA, United States, (2)Globus Medical, Inc., Audubon, PA, United States
- 8:25 am - 8:29 am **119 XLIF vs. MAS TLIF for the Treatment of Degenerative Spondylolisthesis: Interim Results from an Ongoing Prospective Multi-center Comparative Study**
Speaker: [A. Tohmeh](#)
Authors: A. Tohmeh(1), R. Isaacs(2), J. Sembrano(3), SOLAS Degenerative Study Group
(1)Northwest Orthopaedic Specialists, Spokane, WA, United States, (2)Duke University Health System, Neurosurgery, Durham, NC, United States, (3)University of Minnesota, Orthopaedic Surgery, Minneapolis, MN, United States
- 8:30 am - 8:34 am **82 Relationship between Surgical Technique and the Incidence of Adjacent Level Pathology in Lumbar Spine Fusion. Open Traditional Approach (OTA) vs Minimally Invasive Transforaminal Interbody Fusion and Percutaneous Screws (MIS TLIF/ PPS)**

Speaker: [H. Nicola](#)

Authors: M. Da Silva(1), H. Nicola(2)

(1)Clinica Sanatrix, Spinal Surgery, Caracas, Venezuela, (2)Hospital San Juan de Dios, Spine Surgery, Caracas, Venezuela

8:35 am - 8:39 am

514 Clinical Outcomes Following Stand-alone Minimally Invasive Lateral Lumbar Interbody Fusion (LLIF) Surgery for Patients with and without Deformity

Speaker: [B. Bolinger](#)

Authors: B.D. Bolinger(1), G.S. Gandhoke(1), D.O. Okonkwo(1), A.S. Kanter(1)

(1)University of Pittsburgh Medical Center, Neurological Surgery, Pittsburgh, PA, United States

8:40 am - 8:45 am

Discussion

8:46 am - 8:50 am

611 Correction in the Sagittal Plane and Spinopelvic Parameters Following Standard Multilevel Lateral Lumbar Interbody Fusion

Speaker: [R. Jensen](#)

Authors: R. Jensen(1), R. Amaral(1), T. Coutinho(1), L. Marchi(1), L. Pimenta(1,2)

(1)Instituto de Patologia da Coluna, São Paulo, Brazil, (2)UCSD San Diego, San Diego, CA, United States

8:50 am - 8:54 am

463 Surgical Treatment of Pathological Loss of Lumbar Lordosis (Flatback) in the Setting of Normal Sagittal Vertical Axis (SVA) Achieves Similar Clinical Improvement as Surgical Treatment for Elevated SVA

Speaker: [B. Liabaud](#)

Authors: M. Singh(1), J.S. Smith(1), B. Liabaud(2), E. Klineberg(3), C.I. Shaffrey(1), V. Lafage(2), F.J. Schwab(2), T.S. Protopsaltis(2), G.M. Mundis(4), R. Hostin(5), V. Deviren(6), R.A. Hart(7), D.C. Burton(8), S. Bess(9), C.P. Ames(10), International Spine Study Group

(1)University of Virginia Medical Center, Neurosurgery, Charlottesville, VA, United States, (2)NYU Hospital for Joint Diseases, Orthopaedic Surgery, New York, NY, United States, (3)University of California, Davis, Orthopaedic Surgery, Sacramento, CA, United States, (4)San Diego Center for Spinal Disorders, La Jolla, CA, United States, (5)Baylor Scoliosis Center, Orthopaedic Surgery, Plano, TX, United States, (6)University of California, San Francisco Medical Center, Orthopaedic Surgery, San Francisco, CA, United States, (7)Oregon Health and Science University, Orthopaedic Surgery, Portland, OR, United States, (8)University of Kansas Medical Center, Orthopaedic Surgery, Kansas City, NY, United States, (9)Rocky Mountain Hospital for Children, Orthopaedic Surgery, Denver, CO, United States, (10)University of California, Neurosurgery, San Francisco, CA, United States

8:55 am - 8:59 am

206 Coronal Imbalance May Be Neglected in Patients Undergoing Majority Sagittal Deformity Correction

Speaker: [J. Terran](#)

Authors: J. Terran(1), M.C. Gupta(1,2), O. Boachie-Adjei(1,3), M.E. Cunningham(1,3), T.S.

Protopsaltis(1), V. Deviren(1,4), G.M. Mundis(1,5), C.P. Ames(1,6), R. Hostin(1,7), V. Lafage(1), E. Klineberg(1,2), J.S. Smith(1,8), International Spine Study Group

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9:00 am - 9:04 am

210 Early and Late Thoracic Kyphosis Following 104 Lumbar Pedicle Subtraction Osteotomies (LPSO) with Un-fused Thoracic Spine

Speaker: [E. Klineberg](#)

Authors: E. Klineberg(1,2), V. Lafage(1), J. Terran(1), C.P. Ames(1,3), D.C. Burton(1,4), R.A.

Hart(1,5), J.S. Smith(1,6), C.I. Shaffrey(1,7), O. Boachie-Adjei(1,8), K.-M. Fu(1,9), T.S.

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Sacramento, NY, United States

9:05 am - 9:09 am

79 Complications and Inter-center Variability of Three Column Osteotomies for Spinal Deformity Surgery: A Retrospective Review of 423 Patients

Speaker: [K. Bianco](#)

Authors: K. Bianco(1), R. Norton(1), F. Schwab(1), J. Smith(2), E. Klineberg(3), I. Obeid(4), G. Mundis(5), C. Shaffrey(2), K. Kebaish(6), R. Hostin(7), D. Burton(8), C. Ames(9), O. Boachie-Adjei(10), T. Protosaltis(1), V. Lafage(1), International Spine Study Group

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CA, United States, (10)Hospital for Special Surgery, Orthopaedic Surgery, New York, NY, United States

9:10 am - 9:14 am

290 Revision Surgery after Three-column Osteotomy in 335 Adult Spinal Deformity Patients: Inter-center Variability and Risk Factors

Speaker: [S. Maier II](#)

Authors: S.P. Maier II(1), V. Lafage(1), J.S. Smith(2), I. Obeid(3), G. Mundis(4), E. Klineberg(5), K. Kebaish(6), R. Hostin(7), R. Hart(8), D. Burton(9), O. Boachie-Adjei(10), M. Gupta(5), C. Ames(11), T. Protosaltis(1), F. Schwab(1), International Spine Study Group (ISSG)

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(11)University of California, San Francisco Medical Center, Neurosurgery, San Francisco, CA, United States

9:15 am - 9:19 am

287 How Much Deformity Correction Can we Obtain by XLIF and Will it Be Affected by Approach Side: Convex Vs. Concave?

Speaker: [W. Cho](#)

Authors: W. Cho(1), F.P. Cammisa(1), A.A. Sama(1), A.P. Hughes(1), R.C. Huang(1), F.P. Girardi(1)

(1)Hospital for Special Surgery, New York, NY, United States

9:20 am - 9:24 am

183 Limitations and Ceiling Effects of Circumferential Minimally Invasive Surgical (CMIS) Techniques for the Treatment of Adult Scoliosis - Analysis of a 6-year Experience

Speaker: [N. Anand](#)

Authors: N. Anand(1), B. Khandehroo(1), E. Baron(1), S. Kahwaty(1), J.E. Cohen(1), R.B. Cohen(1)

(1)Cedars-Sinai Medical Center, Spine Center, Los Angeles, CA, United States

9:25 am - 9:45 am

Discussion

9:45 am - 10:30 am - General Session: Degenerative Lumbar Spine

Moderator(s): Steven Garfin, MD

9:45 am - 9:49 am

48 Comparison of Clinical Outcomes Following Minimally Invasive Lateral Interbody Fusion Stratified by Preoperative Diagnosis

Speaker: [K. Khajavi](#)

Authors: K. Khajavi(1), A.Y. Shen(1), M. Lagina(1), A. Hutchison(1)

(1)Georgia Spine and Neurosurgery Center, Atlanta, GA, United States

9:50 am - 9:54 am

436 Correlation between Intraoperative Endplate Violation and Subsidence of Polyetheretherketone Intervertebral Cages in Extreme Lateral Interbody Fusion

Speaker: [V. Agarwal](#)

Authors: V. Agarwal(1), J. Bagley(1), K. Knott(1), T. Owens(1), C. Brown(1), R.E. Isaacs(1)

(1)Duke University Health System, Durham, NC, United States

- 9:55 am - 9:59 am **77 Oblique Lateral Interbody Fusion (OLIF) Technique and Complications in 457 Levels L1 to S1**
 Speaker: [R. Hynes](#)
 Authors: R.A. Hynes(1)
 (1)Florida Institute of Technology, Engineering, Melbourne, FL, United States
- 10:00 am - 10:04 am **590 Extreme Lateral Interbody Fusion for Unilateral Symptomatic Vertical Foraminal Stenosis**
 Speaker: [C.P. Hofstetter](#)
 Authors: C.P. Hofstetter(1), M. Alimi(2), E. Elowitz(2), R. Hartl(2)
 (1)University of Miami Miller School of Medicine, Department of Neurological Surgery, Miami, FL, United States, (2)Weill Cornell Brain and Spine Center, Department of Neurological Surgery, New York, NY, United States
- 10:05 am - 10:09 am **461 Clinical Outcomes of Extreme Lateral Interbody Fusion (XLIF) in the Treatment of Degenerative Conditions of the Lumbar Spine**
 Speaker: [A. Tohmeh](#)
 Authors: A. Tohmeh(1), A. Proctor(2)
 (1)NWOS, Spokane, WA, United States, (2)Northwest Orthopaedic Specialists, Spokane, WA, United States
- 10:10 am - 10:14 am **146 Indirect Decompression of Lumbar Spinal Stenosis with Transpsoas Interbody Cages and Percutaneous Posterior Instrumentation**
 Speaker: [B. Santoni](#)
 Authors: A.E. Castellvi(1), T. Nienke(1), G. Marulanda(1), R. Murtagh(2), B. Santoni(3)
 (1)Florida Orthopaedic Institute, Spine, Tampa, FL, United States, (2)Tower Diagnostics, Tampa, FL, United States, (3)Foundation for Orthopaedic Research and Education, Biomechanics Lab, Tampa, FL, United States
- 10:15 am - 10:19 am **608 Clinical and Radiological Consequences of Interbody Cage Subsidence**
 Speaker: [L. Marchi](#)
 Authors: L. Marchi(1,2), R. Amaral(1), T. Coutinho(1), L. Oliveira(1), L. Pimenta(1,3)
 (1)Instituto de Patologia da Coluna, São Paulo, Brazil, (2)Diagnosis Imaging Dept, UNIFESP, São Paulo, Brazil, (3)UCSD San Diego, San Diego, CA, United States
- 10:20 am - 10:24 am **438 Retraction Time Per Level in Relation to Postoperative Leg Pain Following Extreme Lateral Interbody Fusion**
 Speaker: [J. Youssef](#)
 Authors: J.A. Youssef(1), D. Orndorff(1), M. Scott(1), R. Ebner(1)
 (1)Durango Orthopedic Associates/Spine Colorado, Spine Surgery, Durango, CO, United States
- 10:25 am - 10:30 am **Discussion**

10:30 am - 11:00 am - Break on Exhibit Floor

11:00 am - 12:00 pm - General Session: Biomechanics: Understanding Spine Function and Treatments

Moderator(s): Boyle Cheng, PhD

- 11:00 am - 11:04 am **568 Range of Motion of the Intact Lumbar Segment: A Multivariate Study of 42 Lumbar Spines**
 Speaker: [D. Cook](#)
 Authors: D.J. Cook(1), M. Yeager(1), B. Cheng(1)
 (1)Allegheny Health Network, Neurosurgery, Pittsburgh, PA, United States
- 11:05 am - 11:09 am **53 Effect of Physiologic Loads on Cortical and Traditional Pedicle Screw Fixation**
 Speaker: [D. Baluch](#)
 Authors: D.A. Baluch(1), A.A. Patel(2), B. Lullo(3), R.M. Havey(1,4), L.I. Voronov(1,4), N.-L. Nguyen(1), G. Carandang(4), A.J. Ghanayem(1), A.G. Patwardhan(1,4)
 (1)Loyola University Medical Center, Orthopaedic Surgery, Maywood, IL, United States, (2)Northwestern University Feinberg School of Medicine, Orthopaedic Surgery, Chicago, IL, United States, (3)Loyola University Stritch School of Medicine, Maywood, IL, United States, (4)Musculoskeletal Biomechanics Laboratory, Hines, IL, United States
- 11:10 am - 11:14 am **437 Effect of Endplate Integrity on Thoracic Vertebral Compressive Strength**
 Speaker: [A. Neagoe](#)
 Authors: A. Neagoe(1), H.E. Soriano-Baron(1), A.G.U.S. Newcomb(1), N.G. Rodriguez-Martinez(1), P.M. Reyes(1), N. Theodore(1), N.R. Crawford(1)
 (1)Barrow Neurological Institute, Spinal Biomechanics, Phoenix, AZ, United States

- 11:15 am - 11:19 am **137 In vivo 3D Analysis of Cervical Endplate Subchondral Bone Density Distribution**
 Speaker: [T. Hara](#)
 Authors: T. Hara(1), N. Inoue(2), Y. Ohara(3), H. Matsuoka(3), A. Espinoza Orías(2), M. Mizuno(4), J. Mizuno(3)
 (1)Juntendo University, Neurosurgery, Tokyo, Japan, (2)Rush University Medical Center, Orthopedic Surgery, Chicago, IL, United States, (3)Shin-Yurigaoka General Hospital, Neurosurgery, Kawasaki, Japan, (4)Mie University, Neurosurgery, Tsu, Japan
- 11:20 am - 11:24 am **105 An in vitro Biomechanical Study to Evaluate the Kinematics of Postero-lateral Static and Expandable Lumbar Interbody Spacers**
 Speaker: [E. Akeyson](#)
 Authors: E.W. Akeyson(1), S. Chinthakunta(2), T.F. Lightfoot Vidal(3), K. Salloum(3), B. Bucklen(2)
 (1)Center for Advanced Neuro Spine, New Britain, CT, United States, (2)Globus Medical Inc, Research, Audubon, PA, United States, (3)Globus Medical Inc/Drexel University, Research, Audubon/Philadelphia, PA, United States
- 11:25 am - 11:29 am **379 Biomechanical Analysis of an Interspinous Fusion Device as a Stand-alone and as Supplemental Fixation to Posterior Expandable Interbody Cages in the Lumbar Spine**
 Speaker: [S. Gonzalez-Blohm](#)
 Authors: S.A. Gonzalez-Blohm(1), J.J. Doulgeris(1,2), K. Aghayev(1), W.E. Lee III(3), A. Volkov(4), F.D. Vronis(1)
 (1)Moffitt Cancer Center, Neuro-Oncology / Neurosurgery, Tampa, FL, United States, (2)University of South Florida, Mechanical Engineering, Tampa, FL, United States, (3)University of South Florida, Chemical & Biomedical Engineering, Tampa, FL, United States, (4)St John Providence Hospital, Southfield, MI, United States
- 11:30 am - 11:34 am **33 Does Posterior Lumbopelvic Fixation Aid in Unstable Pelvic Fracture Fixation? A Biomechanical Study**
 Speaker: [E. Jazini](#)
 Authors: E. Jazini(1), O. Tannous(1), E. Belin(1), C. Hoshino(1), R. O'Toole(1), K. Salloum(2), M. Hussain(2), N. Klocke(2), B. Bucklen(2), S. Ludwig(1)
 (1)University of Maryland Orthopaedics Associates/R Adams Cowley Shock Trauma Center, Baltimore, MD, United States, (2)Globus Medical, Inc., Audubon, PA, United States
- 11:35 am - 11:39 am **366 Analysis of Spinopelvic Sagittal Balance Using Curve Harmony Angles, a New Method to Quantify Relationship between Adjacent Curves**
 Speaker: [Z. Zheng](#)
 Authors: H. Liu(1), S. Li(1), Z. Zheng(1), H. Wang(1), J. Wang(1), H. Wang(1), B. Li(1), H. Pan(1)
 (1)First Affiliated Hospital of Sun Yat-sen University, Department of Spine Surgery, Guangzhou, China
- 11:40 am - 11:44 am **157 Using a Combination of Intralaminar and Pedicular Screw Constructs for Enhancement of Spinal Stability and Maintenance of Correction in Patients with Sagittal Imbalance: Clinical Applications and Finite Element Analysis**
 Speaker: [I.M. Nanmaz](#)
 Authors: M.E. Inanmaz(1), K.C. Kose(1), H. Atmaca(2), A. Ozkan(3), C. Isik(4), H. Basar(1)
 (1)Sakarya University, Adapazari, Turkey, (2)Akdeniz University, Antalya, Turkey, (3)Duzce University, Duzce, Turkey, (4)Bolu Izzet Baysal University, Bolu, Turkey
- 11:45 am - 11:49 am **446 Sagittal Correction of the Lumbar Spine Using SPO and Expandable TLIF Interbody Devices: A Biomechanical Study**
 Speaker: [N. Qandah](#)
 Authors: N. Qandah(1), N. Klocke(2), S. Chinthakunta(2), M. Hussain(2), M. Moldovsky(2), E. Marvin(1), J. Synkowski(1), S. Yandamuri(2), K. Salloum(2), B. Bucklen(2)
 (1)Neurosurgery/Spine-Carilion, Roanoke, VA, United States, (2)Globus Medical, Inc., Audubon, PA, United States
- 11:50 am - 11:54 am **89 An in vitro Comparative Analysis of a Lateral Expandable Stand-alone Cage and a Transforaminal Static Cage with Posterior Instrumentation in a Degenerative Spondylolisthesis Model**
 Speaker: [J. O'Brien](#)
 Authors: J. O'Brien(1), C. Haines(1), M. Gudipally(2), S. Yandamuri(2), K. Salloum(2), W. Yu(1), B. Brandon(2)
 (1)George Washington University, Washington, DC, United States, (2)Globus Medical Inc, Audubon, PA, United States
- 11:55 pm - 12:00 pm **Discussion**

11:00 am - 12:00 pm - General Session: Lightning Round: MIS, Sagittal Balance, and More

Moderator(s): Jean-Charles LeHuec, MD, PhD

- 11:00 am - 11:03 am **512 Minimum Invasive Interspinous Stabilization with a Helicoidal Implant in the Treatment of Lumbar Stenosis: 1 Year Outcomes**
Speaker: [O. Alves](#)
Authors: O.L. Alves(1), M.J. Coelho(1), O. Gomes(1)
(1)Hospitais Privados de Portugal - Boavista, Servico de Neurocirurgia, Porto, Portugal
- 11:04 am - 11:07 am **256 Reoperation and Immediate Readmission Rates after Circumferential Minimally Invasive Surgical (cMIS) Correction of Adult Spinal Deformities (ASD)**
Speaker: [N. Anand](#)
Authors: N. Anand(1), B. Khandehroo(1), E. Baron(1), S. Kahwaty(1), J.E. Cohen(1), R.B. Cohen(1)
(1)Cedars-Sinai Medical Center, Spine Center, Los Angeles, CA, United States
- 11:08 am - 11:11 am **78 The Sagittal Balance of Cervical Spine after Posterior Open-door Laminoplasty: Comparison between the Modification by Preserving Unilateral Musculo-ligament Complex and Anchor Method**
Speaker: [F. Zhou](#)
Authors: F. Zhou(1), Y. Sun(1), S. Lin(1)
(1)Peking University 3rd Hospital, Orthopaedics, Beijing, China
- 11:12 am - 11:15 am **527 Neurologic Complications in Extreme Lateral Interbody Fusion (XLIF): A Comparative Analysis of Levels L2-3, L3-4 and L4-5**
Speaker: [W. Smith](#)
Authors: W.D. Smith(1)
(1)University Medical Center of Southern Nevada, Las Vegas, NV, United States
- 11:16 am - 11:19 am **204 Three Column Spinal Osteotomies for Adult Spinal Deformity: Inter-center Analysis of Variability in Technique and Alignment Impact**
Speaker: [S. Maier](#)
Authors: P. Devos(1), S.P. Maier(1), J. Terran(1), R. Hostin(1,2), R.A. Hart(1,3), C.P. Ames(1,4), O. Boachie-Adjei(1,5), J.S. Smith(1,6), E. Klineberg(1,7), I. Obeid(1,8), G.M. Mundis(1,9), K. Kebaish(1,10), T.S. Protopsaltis(1), F.J. Schwab(1), V. Lafage(1), International Spine Study Group
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- 11:20 am - 11:23 am **223 Does T1 Pelvic Angle (TPA) Effectively Assess Sagittal Imbalance and Can it Predict Sustainable Correction?**
Speaker: [D. Ryan](#)
Authors: D.J. Ryan(1), T.S. Protopsaltis(1), C.P. Ames(2), R. Hostin(3), E. Klineberg(4), G.M. Mundis(5), I. Obeid(6), K. Kebaish(7), J.S. Smith(8), O. Boachie-Adjei(9), D.C. Burton(10), R.A. Hart(11), F.J. Schwab(1), V. Lafage(1), International Spine Study Group
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- 11:24 am - 11:27 am **572 The Impact of the Cage Height, Diameter and Positioning on Clinical and Radiographic Outcome of the Extreme Lateral Inter-body Fusion**
Speaker: [M. Alimi](#)
Authors: C.P. Hofstetter(1), M. Alimi(1), E. Elowitz(1), R. Härtl(1)
(1)Weill Cornell Brain and Spine Center, Neurological Surgery, New York, NY, United States
- 11:28 am - 11:31 am **316 Clinical Improvement through Nonoperative Treatment of Adult Spinal Deformity: Who**

Is Likely to Benefit?

Speaker: [S. Yang](#)

Authors: C.E. Poorman(1), K. Slobodyanyuk(1), S. Yang(1), J.S. Smith(2), T.S. Protopsaltis(1), R. Hostin(1), S. Bess(3), G.M. Mundis(4), F.J. Schwab(1), V. Lafage(1), International Spine Study Group

(1)NYU Hospital for Joint Diseases, Orthopaedic Surgery, New York, NY, United States,

(2)University of Virginia, Neurosurgery, Charlottesville, VA, United States, (3)Rocky Mountain Hospital for Children, Orthopaedic Surgery, Denver, CO, United States, (4)San Diego Center for Spinal Disorders, La Jolla, CA, United States

11:32 am - 11:35 am

30 Treatment of Myeloma Patients Suffering from Vertebral Compression Fractures with Radiofrequency-targeted Vertebral Augmentation - A 12 Months Evaluation

Speaker: [R. Bornemann](#)

Authors: R. Bornemann(1), T.R. Jansen(2), K. Kabir(2), D.C. Wirtz(2), R. Pflugmacher(2)

(1)Universitätsklinikum Bonn, Orthopädie und Unfallchirurgie, Bonn, Germany,

(2)Universitätsklinikum Bonn, Klinik und Poliklinik für Orthopädie und Unfallchirurgie, Bonn, Germany

11:36 am - 11:39 am

90 Safety and Efficacy of Bioabsorbable Cervical Spacers and rhBMP-2 for Multilevel ACDF

Speaker: [K. Khajavi](#)

Authors: K. Khajavi(1), A.Y. Shen(1), A. Hutchison(1)

(1)Georgia Spine and Neurosurgery Center, Atlanta, GA, United States

11:40 am - 11:43 am

612 Treatment of Contained Lumbar Disc Herniations via Radiofrequency Assisted Micro-tubular Decompression and Ablation: Four Year Results in a Prospective Cohort of 58 Patients

Speaker: [S. Hellinger](#)

Authors: S. Hellinger(1)

(1)ISAR Clinics, Spine Unit, Munich, Germany

11:44 am - 11:47 am

344 Epidemiological Trends in Vertebroplasty and Kyphoplasty between 2004-2011

Speaker: [K. Singh](#)

Authors: A.J. Marquez-Lara(1), S.V. Nandyala(1), S.J. Fineberg(1), M. Noureldin(1), K. Singh(1)

(1)Rush University Medical Center, Orthopaedic Surgery, Chicago, IL, United States

11:48 am - 11:51 am

227 How the Neck Affects the Back: Changes in Regional Cervical Sagittal Alignment Correlate to HRQL Improvement in Adult Thoracolumbar Deformity Patients at Two-year Follow-up

Speaker: [Y. Trimba](#)

Authors: T. Protopsaltis(1), J.K. Scheer(1,2), Y. Trimba(1), J. Terran(1), J.S. Smith(1,3), H.J.

Kim(1,4), G.M. Mundis(1,5), R.A. Hart(1,6), I. McCarthy(1,7), E. Klineberg(1,8), V. Lafage(1), S. Bess(1,9), F.J. Schwab(1), C.I. Shaffrey(1,3), C.P. Ames(1,10), International Spine Study Group

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Surgery, Portland, OR, United States, (7)Institute for Healthcare Research and Improvement,

Baylor Healthcare System, Plano, TX, United States, (8)University of California, Davis,

Orthopaedic Surgery, Sacramento, CA, United States, (9)Rocky Mountain Hospital for Children,

Orthopaedic Surgery, Denver, CO, United States, (10)University of California, Neurosurgery, San

Francisco, CA, United States

11:52 pm - 12:00 pm

Discussion

12:00 pm - 1:30 pm - Industry Workshops (not CME)

1:30 pm - 2:30 pm - Symposium: Cervical Arthroplasty: Is it Now the Gold Standard for Herniated Disc?

Moderator(s): **Scott Blumenthal, MD**

1:30 pm - 1:33 pm

Intro

Speaker: S. Blumenthal

1:34 pm - 1:42 pm

European Experience

Speaker: TBD

1:43 pm - 1:51 pm

Asian Experience

Speaker: Y. Hai

1:52 pm - 2:00 pm

How Cervical TDR Gained Approval in Australia

Speaker: M. Scott-Young

2:01 pm - 2:09 pm

TDR in South America

Speaker: L. Pimenta

2:10 pm - 2:18 pm

TDR in North America

Speaker: R. Guyer

2:19 pm - 2:30 pm

Q&A

2:30 pm - 3:30 pm - General Session: Cervical Spine: TDR Updates and More

Moderator(s): Domagoj Coric, MD

2:30 pm - 2:34 pm

107 Clinical and Radiographic Analysis of an Artificial Cervical Disc: Seven-year Outcomes

Speaker: J. Burkus

Authors: J.K. Burkus(1), P. Mummaneni(2), V. Traynelis(3), R.W. Haid, Jr(4)

(1)The Hughston Clinic, Columbus, GA, United States, (2)University of Calgary, Department of Neurological Surgery, San Francisco, CA, United States, (3)Rush University Medical Center, Department of Neurosurgery, Chicago, IL, United States, (4)Atlanta Brain and Spine Care, Atlanta, GA, United States

2:35 pm - 2:39 pm

149 Sagittal Alignment of One-level TDR and ACDF Patients: An Analysis of Patient Outcomes from a Randomized, Prospective, Clinical Trial

Speaker: M. Hisey

Authors: M.S. Hisey(1), R. Davis(2), G. Hoffman(3), H.W. Bae(4), K.D. Kim(5), S.E. Gaede(6), P. Nunley(7)

(1)Texas Back Institute Research Foundation, Plano, TX, United States, (2)GBMC Healthcare, Baltimore, MD, United States, (3)Orthopaedics Northeast, Fort Wayne, IN, United States, (4)Cedars-Sinai Medical Center, Los Angeles, CA, United States, (5)University of California, Davis Medical Center, Sacramento, CA, United States, (6)Oklahoma Spine & Brain Institute, Tulsa, OK, United States, (7)Spine Institute of Louisiana, Shreveport, LA, United States

2:40 pm - 2:44 pm

314 Sagittal Alignment of Two-level TDR Patients: An Analysis of Patient Outcomes from an FDA IDE Randomized, Prospective, Clinical Trial

Speaker: R. Davis

Authors: R. Davis(1), G. Hoffman(2), H. Bae(3), M. Hisey(4), K. Kim(5), S. Gaede(6), P. Nunley(7)

(1)GBMC Healthcare, Baltimore, MD, United States, (2)Orthopaedics Northeast, Fort Wayne, IN, United States, (3)Cedars-Sinai Medical Center, Los Angeles, CA, United States, (4)Texas Back Institute, Plano, TX, United States, (5)University of California, Davis Medical Center, Sacramento, CA, United States, (6)Oklahoma Spine & Brain Institute, Tulsa, OK, United States, (7)Spine Institute of Louisiana, Shreveport, LA, United States

2:45 pm - 2:49 pm

454 The Incidence of Surgical Treatment at Adjacent Segments after Anterior Cervical Discectomy and Fusion or Cervical Arthroplasty

Speaker: W. Beutler

Authors: W. Beutler(1), W. Peppelman(1), J. McConnell(2), J. Lindley(3), C. Tomaras(4), K. Baker(5), J. Myer(5), D. McKee(5)

(1)Pennsylvania Spine Institute, Harrisburg, PA, United States, (2)OAA Orthopaedic Specialists, Allentown, PA, United States, (3)Neurological Institute of Savannah, Savannah, PA, United States, (4)Peachtree Neurosurgery, Atlanta, GA, United States, (5)Globus Medical, Inc., Audubon, PA, United States

2:50 pm - 2:54 pm

334 SECURE®-C Cervical Artificial Disc IDE Study: Outcomes at Five and Six Years

Speaker: J. McConnell

Authors: J. McConnell(1), J. Highsmith(2), I. Volcan(3), P. Asdourian(4), K. Baker(5), J. Myer(5), D. McKee(5)

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2:55 pm - 2:59 pm

566 What Specific Questions Are Responsible in Driving NDI Superiority of Two-level ADR over Two-level Fusion. Post hoc Item Analysis of Self-reported Outcomes of Two-level Cervical Disc Arthroplasty (CDR, Mobi-C®) vs. Two-level ACDF Treated Patients from the IDE US-RCT

Speaker: [A. Simela](#)
Authors: A. Simela(1), L. Kanim(1), J. Kim(1), H. Bae(1)
(1) Cedars Sinai Medical Center, Spine Center, Los Angeles, CA, United States

3:00 pm - 3:04 pm

225 Cervical Total Disc Replacement versus ACDF: Results from a FDA IDE Clinical Trial through 48 Months

Speaker: [M. Hisey](#)
Authors: M.S. Hisey(1), R. Davis(2), G. Hoffman(3), H.W. Bae(4), K.D. Kim(5), S.E. Gaede(6), P.D. Nunley(7)
(1) Texas Back Institute, Plano, TX, United States, (2) GBMC Healthcare, Baltimore, MD, United States, (3) Orthopaedics Northeast, Fort Wayne, IN, United States, (4) Cedars-Sinai Medical Center, Los Angeles, CA, United States, (5) University of California, Davis Medical Center, Sacramento, CA, United States, (6) Oklahoma Spine & Brain Institute, Tulsa, OK, United States, (7) Spine Institute of Louisiana, Shreveport, LA, United States

3:05 pm - 3:09 pm

196 Clinical Outcome of Heterotopic Ossification According to Depth of Device Insertion in Cervical Prodisc-C® Disc Replacement

Speaker: [K. Cho](#)
Authors: K.S. Cho(1), S.-B. Lee(1), P.-W. Huh(1), H.-J. Bae(1), T.-G. Lee(1)
(1) Uijeongbu St. Mary's Hosp. The Catholic Univ of Korea College of Medicine, Neurosurgery, Uijeongbu, Korea, Republic of

3:10 pm - 3:14 pm

304 Two-level Cervical Total Disc Replacement versus ACDF: Results of a Prospective, Randomized, Clinical Trial with 48 Months Follow-up

Speaker: [R. Davis](#)
Authors: R. Davis(1), G. Hoffman(2), H. Bae(3), M. Hisey(4), K. Kim(5), S. Gaede(6), P. Nunley(7)
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3:15 pm - 3:19 pm

441 One-level versus Two-level Cervical Disc Arthroplasty: Comparative Results from a FDA IDE Clinical Trial with Four-year Follow-up

Speaker: [H. Bae](#)
Authors: H.W. Bae(1), R. Davis(2), G. Hoffman(3), M. Hisey(4), K.D. Kim(5), S.E. Gaede(6), P. Nunley(7)
(1) Cedars-Sinai Spine Center, Department of Surgery, Div of Orthopaedics, Los Angeles, CA, United States, (2) GBMC Healthcare, Baltimore, MD, United States, (3) Orthopaedics Northeast, Fort Wayne, IN, United States, (4) Texas Back Institute, Plano, TX, United States, (5) University of California, Davis Medical Center, Sacramento, CA, United States, (6) Oklahoma Spine & Brain Institute, Tulsa, OK, United States, (7) Spine Institute of Louisiana, Shreveport, LA, United States

3:20 pm - 3:24 pm

529 KineflexIC Cervical Arthroplasty: Long-term Clinical and Radiographic Outcomes from a Prospective, Randomized IDE Study

Speaker: [D. Coric](#)
Authors: D. Coric(1,2), R. Guyer(3), P. Nunley(4), D. Musante(5), M.O. Boltes(1)
(1) Carolina Neurosurgery and Spine Associates, Charlotte, NC, United States, (2) Carolinas Medical Center, Department of Neurosurgery, Charlotte, NC, United States, (3) Texas Back Institute, Texas Health Presbyterian Hospital Plano, Plano, TX, United States, (4) Spine Institute of Louisiana, Shreveport, LA, United States, (5) Triangle Orthopedic Associates, Durham, NC, United States

3:25 pm - 3:29 pm

445 Upper Cervical Compensation for Maintenance of Horizontal Gaze in 150 Thoracolumbar Deformity Patients with and without Cervical Sagittal Deformity: Analysis of Craniocervical Relationships Including CBVA and a Novel Parameter, the Slope of Line of Sight (SLS)

Speaker: [R. Lafage](#)
Authors: T. Protopsaltis(1), R. Lafage(1), J. Smith(2), E. Klineberg(3), M. Gupta(3), H.-J. Kim(4), G. Munds(5), F. Schwab(1), T. Errico(1), C. Ames(6), V. Lafage(1), International Spine Study Group
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3:30 pm - 3:34 pm

218 Cervical Sagittal Deformity Develops after PJK in Adult Thoracolumbar Deformity Correction: Radiographic Analysis Utilizing a Novel Global Sagittal Parameter, the CTPA

Speaker: [A. Boniello](#)

Authors: T. Protopsaltis(1), N. Bronsard(1,2), A. Boniello(1), J. Terran(1), J.S. Smith(1,3), E. Klineberg(1,4), G.M. Mundis(1,5), H.J. Kim(1,6), R. Hostin(1), R.A. Hart(1,7), C.P. Ames(1,8), C.I. Shaffrey(1,3), S. Bess(1,9), F.J. Schwab(1), V. Lafage(1), International Spine Study Group (1)NYU Hospital for Joint Diseases, Orthopaedic Surgery, New York, NY, United States, (2)Centre Hospitalier Universitaire de Nice Hopital Saint Roch, Nice, France, (3)University of Virginia Medical Center, Neurosurgery, Charlottesville, VA, United States, (4)University of California, Davis, Orthopaedic Surgery, Sacramento, CA, United States, (5)San Diego Center for Spinal Disorders, La Jolla, CA, United States, (6)Hospital for Special Surgery, New York, NY, United States, (7)Oregon Health and Science University, Orthopaedic Surgery, Portland, OR, United States, (8)University of California, San Francisco Medical Center, Neurosurgery, San Francisco, CA, United States, (9)Rocky Mountain Hospital for Children, Orthopaedic Surgery, Denver, CO, United States

3:30 pm - 4:00 pm - Break on Exhibit Floor

4:00 pm - 5:00 pm - General Session: Degenerative Lumbar Spine II: Outcomes and Complications

Moderator(s): Scott Blumenthal, MD and Marek Szpalski, MD

- 4:00 pm - 4:04 pm **228 Degenerative Spondylolisthesis: An Analysis of Trends within the National Inpatient Sample Database**
Speaker: [K. Bianco](#)
Authors: K. Bianco(1), R. Norton(1), C. Klifto(1), J. Bendo(1)
(1)NYU Hospital for Joint Diseases, Orthopaedic Surgery, New York, NY, United States
- 4:05 pm - 4:09 pm **402 Incidence and Risk Factors for Peri-operative Visual Loss Following Spinal Fusion**
Speaker: [K. Singh](#)
Authors: S.J. Fineberg(1), S.V. Nandyala(1), A.J. Marquez-Lara(1), R. Singh(1), A.A. Patel(2), M. Noureldin(1), K. Singh(1)
(1)Rush University Medical Center, Orthopaedic Surgery, Chicago, IL, United States, (2)Northwestern Memorial Hospital, Orthopaedic Surgery, Chicago, IL, United States
- 4:10 pm - 4:14 pm **546 Long-term Clinical Outcomes and Complications after Surgical Treatment of Degenerative Spinal Diseases: The Effect of BMI and Smoking**
Speaker: [D. Crandall](#)
Authors: D.G. Crandall(1), J. Revella(1), K. Schmidt(2), R. Mclemore(2)
(1)Sonoran Spine Center, Mesa, AZ, United States, (2)Banner Orthopaedic Residency Program, Phoenix, AZ, United States
- 4:15 pm - 4:19 pm **560 Partial Laminectomy Portends a Better Outcome than Complete Laminectomy When Combined with Posterior Spinal Fusion in the Treatment of Spinal Stenosis and Degenerative Spondylolisthesis**
Speaker: [J. Auerbach](#)
Authors: J.D. Auerbach(1), T.J. Errico(2), R.J. Davis(3)
(1)Bronx-Lebanon Hospital Center, Albert Einstein College of Medicine, Bronx, NY, United States, (2)NYU Hospital for Joint Diseases, New York, NY, United States, (3)Greater Baltimore Neurosurgical Associates, Towson, MD, United States
- 4:20 pm - 4:24 pm **573 Patient-centered Outcomes Following Spinal Fusion Surgery for Degenerative Disc Disease: A Meta-analysis of Randomized and Observational Studies**
Speaker: [J. Kemner](#)
Authors: J. Menzin(1), C. Nichols(1), V. Federico(1), M. Mwamburi(2), J. Kemner(3)
(1)Boston Health Economics, Inc., Waltham, MA, United States, (2)Tufts University, Boston, MA, United States, (3)Medtronic, Inc., Minneapolis, MN, United States
- 4:25 pm - 4:29 pm **444 Improvement in Sagittal Plane Alignment after Lumbar Decompression**
Speaker: [Y. Trimba](#)
Authors: J.B. Knox(1), Y. Trimba(1), J.H. Weinreb(1), J.A. Bendo(1)
(1)NYU Hospital for Joint Diseases, Department of Orthopaedic Surgery, New York, NY, United States
- 4:30 pm - 4:34 pm **131 The Re-operation Rate in a Single Dataset Varies Significantly Depending on the Definitions Applied**
Speaker: [D. Ohnmeiss](#)
Authors: D.D. Ohnmeiss(1), R.D. Guyer(2), S.L. Blumenthal(2), J.E. Zigler(2)
(1)Texas Back Institute Research Foundation, Plano, TX, United States, (2)Texas Back Institute, Plano, TX, United States

- 4:35 pm - 4:39 pm **34 Bench-Marking the Outcome of Lumbar Spine Surgery Using a Spine Register Data Base**
 Speaker: B. Strömqvist
 Authors: B. Strömqvist(1), P. Fritzell(2), O. Hägg(3), B. Jönsson(1), B. Sandén(4), Swedish Society of Spinal Surgeons
 (1)Skåne University Hospital, Orthopedics, Malmö, Sweden, (2)County Hospital Ryhov, Orthopedics, Jönköping, Sweden, (3)Spine Center Gothenburg, Orthopedics, Gothenburg, Sweden, (4)University Hospital, Orthopedics, Uppsala, Sweden
- 4:40 pm - 4:44 pm **417 Risk Factors for Re-operation Following Lumbar Spine Surgery**
 Speaker: K. Singh
 Authors: S.V. Nandyala(1), A.J. Marquez-Lara(1), S.J. Fineberg(1), M. Noureldin(1), K. Singh(1)
 (1)Rush University Medical Center, Orthopaedic Surgery, Chicago, IL, United States
- 4:45 pm - 4:49 pm **56 Dexamethasone Perioperative Co-analgesia in Lumbar Spine Fusion – A Controlled Cohort Study of Efficacy and Safety**
 Speaker: D. Bednar
 Authors: D.A. Bednar(1), F. Farroukhyar(2), A. Wong(3), J. Paul(4)
 (1)McMaster University, Surgery, Hamilton, ON, Canada, (2)McMaster University, Hamilton, ON, Canada, (3)McMaster University, Medicine, Hamilton, ON, Canada, (4)McMaster University, Anesthesia, Hamilton, ON, Canada
- 4:50 pm - 5:00 pm **Discussion**

5:00 pm - 6:00 pm - Oral Posters: Biologics

Moderator(s): J.J. Abitbol, MD and Ray Linovitz, MD

- 5:00 pm - 5:05 pm **282 Analysis of Side Effects Associated with the Use of rhBMP-2 in the Lumbar Fusion: Report of a Retrospective Series of 225 Patients**
 Speaker: S. Litrico
 Authors: S. Litrico(1), F. Pennes(1), N. Bougaci(1), M. Manfiotto(1), P. Paquis(1)
 (1)CHU de Nice, Department of Neurosurgery, Nice, France
- 5:06 pm - 5:11 pm **198 Protamine Based Polyelectrolyte Microbeads: A Potent Carrier of rhBMP-2 in Posterolateral Spinal Fusion Application**
 Speaker: T. Hu
 Authors: T. Hu(1), R.W.M. Lam(1), M. Wang(1), S.Y. Toh(1), S.A. Abbah(1), J.C.-H. Goh(2), J. Li(2), K. Bhakoo(3), S. Cool(1,4), H.K. Wong(1)
 (1)National University of Singapore, Department of Orthopaedic Surgery, Singapore, Singapore, (2)National University of Singapore, Department of Bioengineering, Singapore, Singapore, (3)Agency for Science, Technology and Research, Singapore Bioimaging Consortium, Singapore, Singapore, (4)Agency for Science, Technology and Research, Institute of Medical Biology, Singapore, Singapore
- 5:12 pm - 5:17 pm **113 Enhanced Bone Regeneration Efficiency of BMP-2 with Concurrent Reduction of Heterotopic Ossification: Evaluation of a New BMP-2 Carrier in a Large Animal Model of Lumbar Interbody Fusion**
 Speaker: M. Wang
 Authors: M. Wang(1), S. Akogwu Abbah(2), T. Hu(1), R. Lam(1), J. Goh(1,3), H.-K. Wong(1)
 (1)National University of Singapore, Department of Orthopaedic Surgery, Singapore, Singapore, (2)National University of Ireland, Galway, Ireland, (3)National University of Singapore, Department of Bioengineering, Singapore, Singapore
- 5:18 pm - 5:23 pm **343 In vitro Assessment of the Proliferative and Chemotactic Potential of BMP-13 on a Chondrocyte Cell Line**
 Speaker: A. Diwan
 Authors: F. Zhou(1), A.Q. Wei(1), A. Diwan(1)
 (1)Orthopedic Research Institute, St. George Hospital Campus, University of New South Wales, Sydney, NSW, Australia
- 5:24 pm - 5:29 pm **389 Cytokine Leakage through Annular Fibrous Tears Causes Low Back Pain**
 Speaker: Z. Zheng
 Authors: H. Yang(1), H. Liu(1), Z. Li(1), Z. Zheng(1), J. Wang(1), B. Li(1), K. Zhang(1), W. Ding(1), S. Li(1), H. Wang(1), S.R. Shrivastava(1)
 (1)First Affiliated Hospital of Sun Yat-sen University, Department of Spine Surgery, Guangzhou, China
- 5:30 pm - 5:35 pm **313 Complications of Spinal Fusion with Utilization of Bone Morphogenetic Protein: A Systematic Review of the Literature**

Speaker: [K. Singh](#)

Authors: K. Singh(1), K. Ahmadinia(1), D.K. Park(2), S.V. Nandyala(1), A.J. Marquez-Lara(1), A.A. Patel(3), M. Nouredin(1), S.J. Fineberg(1)

(1)Rush University Medical Center, Orthopaedic Surgery, Chicago, IL, United States, (2)William Beaumont Hospital, Orthopaedic Surgery, Royal Oak, MI, United States, (3)Rush University Medical Center, Northwestern University Feinberg School of Medicine, Orthopaedic Surgery, Chicago, IL, United States

5:36 pm - 5:41 pm

377 Enhanced Control of Bone Formation with Polyelectrolyte Microbeads Incorporating Heparin and Bone Morphogenetic Protein-2 in a Two-level Porcine Posterolateral Spinal Fusion Model

Speaker: [T. Hu](#)

Authors: T. Hu(1), M. Wang(1), R.W.M. Lam(1), S.Y. Toh(1), S.A. Abbah(1), J.C.-H. Goh(2), J. Li(2), K. Bhakoo(3), S. Cool(1,4), H.K. Wong(1)

(1)National University of Singapore, Department of Orthopaedic Surgery, Singapore, Singapore, (2)National University of Singapore, Department of Bioengineering, Singapore, Singapore, (3)Agency for Science, Technology and Research, Singapore Bioimaging Consortium, Singapore, Singapore, (4)Agency for Science, Technology and Research, Institute of Medical Biology, Singapore, Singapore

5:42 pm - 5:47 pm

474 Influence of Non-opioid Analgesics on Healthy Nucleus Pulposus Cells

Speaker: [M. Ogon](#)

Authors: C. Eder(1), J. Trifinopoulos(1), S. Schildboeck(1), N. Koppensteiner(2), J. Zolles(2), E. Falkner(3), M. Ogon(1)

(1)Orthopedic Hospital Speising, Vienna, Austria, (2)HBLVA Rosensteingasse, Vienna, Austria, (3)University of Vienna, Vienna, Austria

5:48 pm - 5:53 pm

549 Amniotic Membrane Microparticles Decrease Cytokine, Matrix Degradation and Associated Pain Marker Expression in Human Intervertebral Disc Explant Cultures

Speaker: [Y. Lee](#)

Authors: Y.-P. Lee(1), R. Pichika(1), S. Garfin(1), M. Lenz(1), K. Masuda(1)

(1)UCSD San Diego, Orthopaedic Surgery, San Diego, CA, United States

5:54 pm - 5:59 pm

550 New Generation of Demineralized Bone Matrix Promotes Early Bone Remodeling in a Posterolateral Athymic Rat Spine Fusion Model

Speaker: [A. Breceovich](#)

Authors: A.T. Breceovich(1), P. Kiely(1), O. Costantini(1), F.P. Cammisa, Jr.(1), C. Abjornson(1)

(1)Hospital for Special Surgery, Integrated Spine Research Program, New York, NY, United States

6:00 pm - 6:05 pm

Discussion

5:00 pm - 6:00 pm - Oral Posters: Cervical

Moderator(s): Roberto Diaz, MD and Pierce Nunley, MD

5:00 pm - 5:05 pm

189 Maintenance of Implant Motion in Multilevel Cervical Disc Arthroplasty - A Review of over 200 Implants

Speaker: [A. Berg](#)

Authors: A.J. Berg(1), C.D. Jensen(1), J.A. Tankel(1), M. Hernandez(1), G.R. Reddy(1), T. Friesem(1)

(1)North Tees and Hartlepool NHS Foundation Trust, Spinal Unit, Stockton on Tees, United Kingdom

5:06 pm - 5:11 pm

484 Does Workers' Compensation Status Affect Outcomes of Cervical Disc Arthroplasty? A Comparative Prospective Study

Speaker: [M. Gornet](#)

Authors: M.F. Gornet(1), F.W. Schranck(2), B.A. Taylor(1), B. Kopjar(3)

(1)The Orthopedic Center of Saint Louis, Spine Research Center, Saint Louis, MO, United States, (2)SPIRITT Research, Saint Louis, MO, United States, (3)University of Washington, Seattle, MO, United States

5:12 pm - 5:17 pm

367 Cervical Kinematics after Total Disc Replacement (TDR): Flexion-extension and Lateral Bending Motion Patterns

Speaker: [O. Gille](#)

Authors: O. Gille(1), A. Ramadan(2), C. Mazel(3), L. Balabaud(3)

(1)Pellegrin University Hospital, Orthopaedic Surgery and Traumatology, Bordeaux, France, (2)Clinique Beaulieu, Neurosurgery, Geneva, Switzerland, (3)I M Montsouris, Orthopaedic Surgery and Traumatology, Paris, France

5:18 pm - 5:23 pm

209 Clinical Outcomes Following Anterior Cervical Hybrid Surgery Using Total Disc

Replacement Combined with Anterior Cervical Fusion at the Adjacent Segment

Speaker: [R. Rogers](#)

Authors: R.W. Rogers(1), S.L. Blumenthal(2), R.D. Guyer(2), J.E. Zigler(2), D.D. Ohnmeiss(1)
(1)Texas Back Institute Research Foundation, Plano, TX, United States, (2)Texas Back Institute, Plano, TX, United States

5:24 pm - 5:29 pm

482 Does Mental Health Status Affect Outcomes of Cervical Disc Arthroplasty?

Speaker: [M. Gornet](#)

Authors: M.F. Gornet(1), F.W. Schranck(2), B.A. Taylor(1), B. Kopjar(3)
(1)The Orthopedic Center of St. Louis, Spine Research Center, Saint Louis, MO, United States, (2)SPIRITT Research, Saint Louis, MO, United States, (3)University of Washington, Seattle, MO, United States

5:30 pm - 5:35 pm

613 A Detailed Description of Paravertebral Ossification in Cervical Artificial Disc Replacement: A Prospective Clinical Study and Review of Papers

Speaker: [W. Tian](#)

Authors: W. Tian(1), X. Han(1), J. Yue(2)
(1)Beijing Jishuitan Hospital, Fourth Clinical Medical College of Peking University, Department of Spine Surgery, Beijing, China, (2)Yale University School of Medicine, Department of Orthopaedics and Rehabilitation, New Haven, CT, United States

5:36 pm - 5:41 pm

588 Clinical and Radiological Results in Sagittal Balance and Kinematics after Total Disc Arthroplasty with Mobi-C® in Treatment of Cervical Disc Disease since 2009

Speaker: [G. Bajares](#)

Authors: G. Bajares(1,2), A. Pérez-Oliva(1,2), N. Cruz(1,2), A. Acosta(2), A. Montero(1), D. Molina(2)
(1)Unidad de Columna, Caracas, Venezuela, (2)Instituto de Columna Caracas, Caracas, Venezuela

5:42 pm - 5:47 pm

552 Effect of Sagittal-plane Transnational Function for Cervical Artificial Disc Replacement

Speaker: [D. Erbulut](#)

Authors: D.U. Erbulut(1), I. Zafarparandeh(2), I. Lazolgu(2), A.F. Ozer(3)
(1)Koc University, Mechanical Engineering and Neurosurgery, Istanbul, Turkey, (2)Koc University, Mechanical Engineering, Istanbul, Turkey, (3)Koc University, Neurosurgery, Istanbul, Turkey

5:48 pm - 5:53 pm

365 Clinical Outcomes, Sagittal Alignment and Ranges of Motion 46 Months after Cervical Arthroplasty with a Ceramic-on-Ceramic Prosthesis

Speaker: [A. Ramadan](#)

Authors: A. Ramadan(1), O. Gille(2), C. Mazel(3), L. Balabaud(3)
(1)Clinique Beaulieu, Neurosurgery, Geneva, Switzerland, (2)Pellegrin University Hospital, Orthopaedic Surgery and Traumatology, Bordeaux, France, (3)I M Montsouris, Orthopaedic Surgery and Traumatology, Paris, France

5:54 pm - 5:59 pm

150 Radiographic Outcomes of Single Level Cervical Disc Arthroplasty - Three Different Implants with Greater than Two Years Follow-up

Speaker: [A. Berg](#)

Authors: A.J. Berg(1), C.D. Jensen(1), J.A. Tankel(1), M. Hernandez(1), C. Bhatia(1), G.R. Reddy(1), T. Friesem(1)
(1)North Tees and Hartlepool NHS Foundation Trust, Spinal Unit, Stockton on Tees, United Kingdom

6:00 pm - 6:05 pm

54 The Incidence and Mortality of Post-operative Strokes following Anterior Cervical Fusion

Speaker: [K. Singh](#)

Authors: A.J. Marquez-Lara(1), S.V. Nandyala(1), D.R. Schmitt(1), S.J. Fineberg(1), M. Noureldin(1), K. Singh(1)
(1)Rush University Medical Center, Orthopaedic Surgery, Chicago, IL, United States

6:06 pm - 6:11 pm

52 Comparison between Revision Lumbar TDR and Revision ALIF between 2002-2011

Speaker: [K. Singh](#)

Authors: A.J. Marquez-Lara(1), S.V. Nandyala(1), S.J. Fineberg(1), M. Noureldin(1), K. Singh(1)
(1)Rush University Medical Center, Orthopaedic Surgery, Chicago, IL, United States

6:12 pm - 6:17 pm

Discussion

5:00 pm - 6:00 pm - Oral Posters: Cutting Edge

Moderator(s): Junichi Mizuno, MD

5:00 pm - 5:05 pm

570 Laser Modified PEEK Implants as an Adjunct to Interbody Fusion: A Sheep Model

Speaker: [T. Ganey](#)

Authors: T.M. Ganey(1), P. Colahan(2), T. Broome(3), R. Srinivas(1), F.E. Livingston(4)
(1)Atlanta Medical Center, Orthopaedic Surgery, Atlanta, GA, United States, (2)University of Florida, College of Veterinary Medicine, Large Animal Surgery, Gainesville, FL, United States, (3)University of Florida, College of Veterinary Medicine, Gainesville, FL, United States, (4)Aerospace Corporation, El Segundo, CA, United States

5:06 pm - 5:11 pm

226 Randomized Study of Anular Repair Readmission Rates Following Discectomy

Speaker: [S. Blumenthal](#)

Authors: S.L. Blumenthal(1), Anulex Study Group
(1)Texas Back Institute, Plano, TX, United States

5:12 pm - 5:17 pm

179 Endoscopically Guided Foraminal and Dorsal Rhizotomy for Chronic Low Back Pain

Speaker: [A. Yeung](#)

Authors: A.T. Yeung(1,2)
(1)Desert Institute for Spine Care, Phoenix, AZ, United States, (2)University of New Mexico School of Medicine, Neurosurgery, Albuquerque, NM, United States

5:18 pm - 5:23 pm

215 Spinal Cord Stimulator Re-operations: Review of Cases from One Practice

Speaker: [R. Rashbaum](#)

Authors: R.F. Rashbaum(1), S. Verma-Kurvari(2), D.D. Ohnmeiss(2)
(1)Texas Back Institute, Plano, TX, United States, (2)Texas Back Institute Research Foundation, Plano, TX, United States

5:24 pm - 5:29 pm

510 Radiologic Evaluation of a Novel Radiolucent CF/PEEK Pedicle Screw Using Fluoroscopy, CT and MRI

Speaker: [F. Kilian](#)

Authors: F. Kilian(1), T. Nydegger(2), F. Külling(3), R. Wieling(2), N. Aebli(4), T. Forster(3)
(1)Katholisches Klinikum Koblenz, Klinik für Wirbelsäulen Chirurgie, Koblenz, Germany, (2)icotec ag, Spine, Altstätten, Switzerland, (3)Kantonsspital St.Gallen, Department of Orthopaedic Surgery, St.Gallen, Switzerland, (4)Andreas Klinik, Spine Surgery, Cham, Switzerland

5:30 pm - 5:35 pm

136 Interspinal Lumbar Decompression Fusion (ILIF) for Spinal Claudication

Speaker: [G. Diaz](#)

Authors: G. Diaz(1), C.R. Cook(2), R. Tyo(2)
(1)Michigan Head and Spine, Southfield, MI, United States, (2)DC2 Healthcare, Nashville, TN, United States

5:36 pm - 5:41 pm

440 Randomized Study of Anular Repair Following Discectomy in a Smoking Population

Speaker: [J. Sherman](#)

Authors: J.E. Sherman(1), Anulex Study Group
(1)Twin City Orthopedics, Minneapolis, MN, United States

5:42 pm - 5:47 pm

59 Initial Results of a Multi-center Study of the InterCushion Disc Nucleus Replacement

Speaker: [P. De Muelenaere](#)

Authors: P.F.R.G. De Muelenaere(1), J. Hurlbert(2), P. Asdourian(3), A. Schwartz(4), J.C. Felt(5)
(1)Brandon Regional Health Authority, Department of Surgery, Brandon, MB, Canada, (2)University of Calgary, Department of Clinical Neurosciences, Calgary, AB, Canada, (3)Greater Chesapeake Orthopaedic Associates, Baltimore, MD, United States, (4)Orthopedic SpineCare of Long Island, Huntington Station, NY, United States, (5)Vertebral Technologies Inc., Minnetonka, MN, United States

5:48 pm - 5:53 pm

403 How Many Implants Can Be Placed in Minimally Invasive Sacroiliac Joint Fusions?

Speaker: [J. Breen](#)

Authors: D.W. Polly(1), C.G. Ledonio(1), J. Breen(1), I. Ninkovic(1), E.R. Santos(1)
(1)University of Minnesota, Orthopaedic Surgery, Minneapolis, MN, United States

5:54 pm - 5:59 pm

450 Clinical Benefits of Using Autologous Conditioned Serum (Orthokine/ ACS) to Treat Sciatica and Discogenic Back Pain

Speaker: [C. Moser](#)

Authors: C. Moser(1,2), P. Wehling(3,4,5), J. Becker(1), D. Groenemeyer(2,6), J. Reinecke(7)
(1)Groenemeyer Institute for Microtherapy, Orthopaedics, Bochum, Germany, (2)University Witten/Herdecke, Faculty for Radiology and Microtherapy, Bochum, Germany, (3)Private Group Practice Prof. Wehling, Dr. Hartmann, Orthopaedics, Duesseldorf, Germany, (4)University of North Carolina, Comprehensive Center for Inflammatory Disorders, Chapel Hill, NC, United States, (5)Orthogen AG, Orthobiologics, Duesseldorf, Germany, (6)Groenemeyer Institute for Microtherapy, Radiology, Bochum, Germany, (7)Orthogen, Orthobiologics, Duesseldorf, Germany

5:00 pm - 6:00 pm - Oral Posters: Lumbar

Moderator(s): Matthew McDonald, MBBS, FRACS

- 5:00 pm - 5:05 pm **169 Clinical and Radiographic Long-term Results of PEEK-non-Fusion Spine Implants**
Speaker: [T. Barz](#)
Authors: T. Barz(1), M. Melloh(2), L.P. Staub(3), S. Lord(4), H.R. Merk(5)
(1)Asklepios Klinikum Uckermark, Department of Orthopaedic Surgery, Schwedt, Germany, (2)University of Western Australia, Western Australian Institute for Medical Research (WAIMR), Nedlands, WA, Australia, (3)University of Bern, Senior Research Associate, Institute for Evaluative Research in Orthopaedic Surgery, Bern, Switzerland, (4)University of Sydney, NHMRC Clinical Trials Centre, Sydney, NSW, Australia, (5)University of Greifswald, Department of Orthopaedic Surgery, Greifswald, Germany
- 5:06 pm - 5:11 pm **378 Minimum Ten-year Follow-up of Decompression and Dynamic Stabilization for Spinal Stenosis with Degenerative Spondylolisthesis**
Speaker: [A. Mehrkens](#)
Authors: A. Mehrkens(1), K. Veresciagina(1), A.T. Mameghani(1), A.M. Mueller(1), B. Jeanneret(1), S. Schaeren(1)
(1)University Hospital, Department of Orthopaedic Surgery - Spine Unit, Basel, Switzerland
- 5:12 pm - 5:17 pm **181 Changes in Back Pain after Lumbar Spinal Fusion vs. Decompression Surgery**
Speaker: [L. Panzenboeck](#)
Authors: L. Panzenboeck(1), A. Tuschel(1)
(1)Speising Orthopaedic Hospital, Dept. for Spine Surgery, Vienna, Austria
- 5:18 pm - 5:23 pm **222 Comparison Between Instrumented and Uninstrumented Posterolateral Fusion for Lumbar Spinal Stenosis and Spondylolisthesis**
Speaker: [A. Richter](#)
Authors: A. Richter(1), S. Koutsoumbelis(1), D. Essig(1), S. Merwin(1), M. Goldstein(2), J. Silber(1)
(1)North Shore LIJ Health System, Dept of Orthopaedic Surgery, New Hyde Park, NY, United States, (2)Orthopaedic Associates of Manhasset, Great Neck, NY, United States
- 5:24 pm - 5:29 pm **424 Peri-operative Outcomes between Surgical Approaches for Single-level Lumbar Fusions for Spondylolisthesis**
Speaker: [K. Singh](#)
Authors: S.V. Nandyala(1), A.J. Marquez-Lara(1), S.J. Fineberg(1), M. Noureldin(1), K. Singh(1)
(1)Rush University Medical Center, Orthopaedic Surgery, Chicago, IL, United States
- 5:30 pm - 5:35 pm **336 An Evaluation of Outcomes of the Surgical Treatment for Adult L5 Lumbar Spondylolysis - A Technique of Pars Decompression and Facet Fixation Using Cannulated Screws**
Speaker: [F. Suetsuna](#)
Authors: F. Suetsuna(1), T. Kaneko(2), T. Irie(2)
(1)Hachinohe Municipal Hospital, Dept. of Orthopaedic Surgery, Hachinohe, Japan, (2)Hachinohe Municipal Hospital, Hachinohe, Japan
- 5:36 pm - 5:41 pm **315 The Effect of TLIF Cage Placement on Intervertebral Range-of-Motion**
Speaker: [D. Cook](#)
Authors: D.J. Cook(1), M.S. Yeager(1), C. Wade(2), B.C. Cheng(1), E.R. Prostko(1)
(1)Allegheny Health Network, Neurosurgery, Pittsburgh, PA, United States, (2)Auburn University, Department of Industrial and Systems Engineering, Auburn, AL, United States
- 5:42 pm - 5:47 pm **324 L5S1 Low-grade Spondylolisthesis treated by ALIF - Local Lordosis Correction**
Speaker: [R. Jensen](#)
Authors: R. Jensen(1), L. Marchi(1), R. Amaral(1), T. Coutinho(1), L. Oliveira(1), E. Coutinho(1), T. Bueno(1), L. Pimenta(1,2)
(1)IPC, Sao Paulo, Brazil, (2)UCSD San Diego, Neurosurgery, San Diego, CA, United States
- 5:48 pm - 5:53 pm **329 A Biomechanical Study of ALIF Cages in Combination with a Spinous Process Clamp**
Speaker: [B. Cheng](#)
Authors: B.C. Cheng(1,2), D.J. Cook(2), M.S. Yeager(2), M.Y. Oh(2), D.M. Whiting(2)
(1)Drexel University, Neurosurgery, Mars, PA, United States, (2)Allegheny Health Network, Neurosurgery, Pittsburgh, PA, United States
- 5:54 pm - 5:59 pm **205 Comparative Analysis of Cauda Equina Syndrome (CES) Patients versus an Unaffected Population Undergoing Spinal Surgery**
Speaker: [B. Marascalchi](#)
Authors: B.J. Marascalchi(1), P.G. Passias(1), V. Goz(1), J.H. Weinreb(1), L. Joo(2), T.J. Errico(1)
(1)NYU Hospital for Joint Diseases, Department of Orthopaedic Surgery, New York, NY, United States, (2)NYU School of Medicine, Biostatistics, Department of Population Health, New York, NY, United States

- 6:00 pm - 6:05 pm **349 Perioperative Outcomes of Multi-level versus Single Level Lumbar Spine Surgery**
 Speaker: [K. Singh](#)
 Authors: S.V. Nandyala(1), A.J. Marquez-Lara(1), S.J. Fineberg(1), M. Noureldin(1), K. Singh(1)
 (1)Rush University Medical Center, Orthopaedic Surgery, Chicago, IL, United States
- 6:06 pm - 6:10 pm **346 Perioperative Outcomes of Multi-level Anterior-posterior Lumbar Fusions**
 Speaker: [K. Singh](#)
 Authors: S.V. Nandyala(1), A.J. Marquez-Lara(1), S.J. Fineberg(1), M. Noureldin(1), K. Singh(1)
 (1)Rush University Medical Center, Orthopaedic Surgery, Chicago, IL, United States

5:00 pm - 6:00 pm - Oral Posters: MIS

Moderator(s): Rodrigo Amaral, MD and Zach Smith, MD

- 5:00 pm - 5:05 pm **480 Severe Thoracolumbar Comminuted Burst Fractures Treated with Posterior Pedicle Screw Fixation**
 Speaker: [Z. Luo](#)
 Authors: Z.-P. Luo(1), J. Pan(1), H.-L. Yang(1)
 (1)Department of Orthopedics of 1st Affiliated Hospital and Orthopedic Institute, Soochow University, Suzhou, China
- 5:06 pm - 5:11 pm **12 Radiofrequency Kyphoplasty Combined with Posterior Fixation in the Treatment of Burst Fractures**
 Speaker: [R. Pflugmacher](#)
 Authors: R. Pflugmacher(1), R. Bornemann(1), T.R. Jansen(1), K. Kabir(1), D.C. Wirtz(1)
 (1)Universitätsklinikum Bonn, Klinik und Poliklinik für Orthopädie und Unfallchirurgie, Bonn, Germany
- 5:12 pm - 5:17 pm **526 Acute and Hyper-acute Corpectomy for Traumatic Burst Fractures Using a Mini-open Lateral Approach**
 Speaker: [W. Smith](#)
 Authors: W.D. Smith(1)
 (1)University Medical Center of Southern Nevada, Las Vegas, NV, United States
- 5:18 pm - 5:23 pm **571 Exclusive Use of Extreme Lateral Lumbar Interbody Fusion for Treatment of Disc Infection**
 Speaker: [K. Madhavan](#)
 Authors: K. Madhavan(1), M.Y. Wang(1), S.K. Williams(1), S. Vanni(1)
 (1)University of Miami, Neurosurgery, Miami, FL, United States
- 5:24 pm - 5:29 pm **66 Oblique Lateral Lumbar Interbody Fusion: Description, Safety and Feasibility of a Novel Technique**
 Speaker: [W. Tally](#)
 Authors: W.C. Tally(1,2), B.V. Kovalenko(1), S. Green(1)
 (1)University of Georgia/Georgia Regents University Medical Partnership, Athens, GA, United States, (2)Athens Orthopedic Clinic, Athens, GA, United States
- 5:30 pm - 5:35 pm **182 The Axilla of the Foramen in the "Hidden Zone between the Exiting and Traversing Nerve Hides Patho-anatomy Responsible for Unrecognized Lumbar Pain Generators and FBSS"**
 Speaker: [A. Yeung](#)
 Authors: A.T. Yeung(1,2)
 (1)Desert Institute for Spine Care, Phoenix, AZ, United States, (2)University of New Mexico School of Medicine, Albuquerque, NM, United States
- 5:36 pm - 5:41 pm **235 Safety and Efficacy of a Novel Suction Curette Device When Compared to Standard Discectomy**
 Speaker: [A. Fayyazi](#)
 Authors: A. Fayyazi(1), N. Ordway(2), W. Lavelle(2), A. Araghi(3), R. Buckley(4)
 (1)VSAS Orthopaedics, Allentown, PA, United States, (2)SUNY Upstate Medical University, Orthopaedics, Syracuse, NY, United States, (3)The CORE Institute, Phoenix, AZ, United States, (4)Hamilton Orthopaedic Surgery and Sports Medicine, Hamilton, NY, United States
- 5:42 pm - 5:47 pm **596 Novel Expandable and Articulated Intervertebral TLIF Cage with Optimized Lordosis Correction**
 Speaker: [J. Le Huec](#)
 Authors: J.C. Le Huec(1), M.M. Levy(2), O. Keynan(3), K.J. Schnake(4)
 (1)Ortho-Spine Department, CHU Pellegrin, Université Bordeaux, DETERCA, Bordeaux, France, (2)Technon Israel Institute of Technology, Haifa, Israel, (3)Tel Aviv Sourasky Medical Center, Tel Aviv, Israel, (4)Center for Spinal Surgery and Neurotraumatology, Berufsgenossenschaftliche

5:48 pm - 6:00 pm

Discussion

5:00 pm - 6:00 pm - Oral Posters: Scoliosis

Moderator(s): Asdrubal Falavigna, MD and Isador Lieberman, MD, MBA, FRCSC

5:00 pm - 5:05 pm

323 Is Lateral Transpoas Approach Feasible for the Treatment of Adult Degenerative Scoliosis?

Speaker: [L. Pimenta](#)

Authors: C. Castro(1), L. Marchi(1), L. Oliveira(1), R. Amaral(1), T. Coutinho(1), R. Jensen(1), E. Coutinho(1), T. Bueno(1), L. Pimenta(1,2)

(1)IPC, Sao Paulo, Brazil, (2)UCSD San Diego, Neurosurgery, San Diego, CA, United States

5:06 pm - 5:11 pm

231 Poor Psychosocial Profile Reported by SF 36, SRS 22r, and DRAM Does Not Predict Outcome Following Adult Spinal Deformity Surgery

Speaker: [J. Terran](#)

Authors: J. Terran(1), F.J. Schwab(1), G.M. Mundis(1,2), E. Klineberg(1,3), J.M. Buchowski(1,4), R.A. Hart(1,5), R. Hosten(1,6), M.C. Gupta(1,3), C.P. Ames(1,7), J.S. Smith(1,8), C.I.

Shaffrey(1,8), V. Lafage(1), S. Bess(1,9), D.C. Burton(1,10), International Spine Study Group (1)NYU Hospital for Joint Diseases, Orthopaedic Surgery, New York, NY, United States, (2)San Diego Center for Spinal Disorders, La Jolla, CA, United States, (3)University of California, Davis, Orthopaedic Surgery, Sacramento, CA, United States, (4)Washington University, Orthopaedic Surgery, St. Louis, MO, United States, (5)Oregon Health and Science University, Orthopaedic Surgery, Portland, OR, United States, (6)Baylor Scoliosis Center, Orthopaedic Surgery, Plano, TX, United States, (7)University of California, Neurosurgery, San Francisco, CA, United States, (8)University of Virginia Medical Center, Neurosurgery, Charlottesville, VA, United States, (9)Rocky Mountain Hospital for Children, Orthopaedic Surgery, Denver, CO, United States, (10)University of Kansas Medical Center, Orthopaedic Surgery, Kansas City, KS, United States

5:12 pm - 5:17 pm

458 Long-term Clinical and Occupational Outcomes after Long Segmental Arthrodesis for Spinal Deformity: The Effect of BMI and Smoking

Speaker: [D. Crandall](#)

Authors: D.G. Crandall(1), J. Revella(1), K. Schmidt(2), R. Mclemore(2)

(1)Sonoran Spine Center, Mesa, AZ, United States, (2)Banner Orthopaedic Residency Program, Phoenix, AZ, United States

5:18 pm - 5:23 pm

207 Impact of Major and Minor Complications on Health Related Quality of Life Following Adult Spinal Deformity Surgery: Multicenter Prospective Database

Speaker: [K. Fu](#)

Authors: E. Klineberg(1,2), K.-M. Fu(1,3), J. Terran(1), J.S. Smith(1,4), V. Lafage(1), F.J. Schwab(1), S. Bess(1,5), R.A. Hart(1,6), K. Kebaish(1,7), D.C. Burton(8,9), C.I. Shaffrey(1,4), C.P. Ames(1,10), R. Hosten(1,11), G.M. Mundis(1,12), M.C. Gupta(1,2), International Spine Study Group

(1)NYU Hospital for Joint Diseases, Orthopaedic Surgery, New York, NY, United States, (2)University of California, Davis, Orthopaedic Surgery, Sacramento, CA, United States, (3)Weill Cornell Medical College, Neurosurgery, New York, NY, United States, (4)University of Virginia Medical Center, Neurosurgery, Charlottesville, VA, United States, (5)Rocky Mountain Hospital for Children, Orthopaedic Surgery, Denver, CO, United States, (6)Oregon Health and Science University, Orthopaedic Surgery, Portland, OR, United States, (7)Johns Hopkins University School of Medicine, Orthopaedic Surgery, Baltimore, MD, United States, (8)NYU Hospital for Joint Diseases, Department of Orthopaedic Surgery, New York, NY, United States, (9)University of Kansas Medical Center, Orthopaedic Surgery, Kansas City, KS, United States, (10)University of California, Neurosurgery, San Francisco, CA, United States, (11)Baylor Scoliosis Center, Orthopaedic Surgery, Plano, TX, United States, (12)San Diego Center for Spinal Disorders, La Jolla, CA, United States

5:24 pm - 5:29 pm

401 Comparison of Peri-operative Patient Characteristics, Outcomes and Risks of Post-operative Complications Following Thoracolumbar Fusion for Spinal Deformity at Teaching and Non-teaching Hospitals

Speaker: [K. Singh](#)

Authors: S.V. Nandyala(1), A.J. Marquez-Lara(1), S.J. Fineberg(1), M. Noureldin(1), K. Singh(1)

(1)Rush University Medical Center, Orthopaedic Surgery, Chicago, IL, United States

5:30 pm - 5:35 pm

159 The Universal Clamp Hybrid System: A Safe Technique to Correct Deformity and Restore Kyphosis in Adolescent Idiopathic Scoliosis

Speaker: [L. Oggiano](#)

Authors: G. La Rosa(1), L. Oggiano(1)

(1)Bambino Gesù Children's Hospital, IRCCS, Department of Surgery and Transplants Center - Orthopedic Unit, Rome-Fiumicino, Italy

5:36 pm - 5:41 pm

141 Thoracic and Lumbar Vertebrae Morphology in Lenke Type 1 Female Adolescent Idiopathic Scoliosis Patients: A Fine CT Scan Based Analysis

Speaker: [I. Lieberman](#)

Authors: I.H. Lieberman(1), K. Siemionow(2), X. Hu(1)

(1)Texas Back Institute, Texas Health Presbyterian Hospital Plano, Scoliosis and Spine Tumor Center, Plano, TX, United States, (2)University of Illinois, Department of Orthopaedic Surgery, Chicago, IL, United States

5:42 pm - 5:47 pm

102 Variance in Complication Rate Reporting among High Volume Spinal Deformity Centers –Analysis of a Multicenter Prospective Database

Speaker: [E. Klineberg](#)

Authors: E. Klineberg(1,2), J. Buchowski(1,3), K.-M. Fu(1,4), J.S. Smith(1,5), J. Terran(1), O.

Boachie-Adjei(1,6), V. Lafage(1), F.J. Schwab(1), S. Bess(1,7), D.C. Burton(1,8), C.I. Shaffrey(1,9), C.P. Ames(1,10), R. Hostin(1,11), G.M. Mundis(1,12), M.C. Gupta(1,2), International Spine Study Group

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(2)University of California, Davis, Orthopaedic Surgery, Sacramento, CA, United States,

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Surgery, Denver, CO, United States, (8)University of Kansas Medical Center, Orthopaedic

Surgery, Kansas City, KS, United States, (9)University of Virginia Medical Center, Neurosurgery,

Charlottesville, VA, United States, (10)University of California, San Francisco Medical Center,

Neurosurgery, San Francisco, CA, United States, (11)Baylor Scoliosis Center, Orthopaedic

Surgery, Plano, TX, United States, (12)San Diego Center for Spinal Disorders, La Jolla, CA,

United States

5:48 pm - 5:53 pm

455 Gait Improvement after Fusion for AIS Is Influenced by Measures in Coronal and Sagittal Planes

Speaker: [V. Lafage](#)

Authors: J. Paul(1), A. Patel(2), E.M. Godwin(2), K. Bianco(1), S.P. Maier(1), C. Spero(2), N.H.

Post(3), T.J. Errico(1), V. Lafage(1), C. Paulino(2)

(1)NYU Hospital for Joint Diseases, Orthopaedic Surgery, New York, NY, United States, (2)SUNY

Downstate Medical Center, Orthopaedic Surgery, Brooklyn, NY, United States, (3)New York

University School of Medicine, New York, NY, United States

5:54 pm - 5:59 pm

497 Effect of Distraction Force on the Thoracic Kyphosis of a Juvenile Spine Patient after Dual Growth Rod Instrumentation: A Growth Modulation Integrated Finite Element Study

Speaker: [A. Agarwal](#)

Authors: A. Agarwal(1), A.K. Agarwal(1,2), V.K. Goel(1,2)

(1)University of Toledo, Bioengineering, Toledo, OH, United States, (2)University of Toledo,

Orthopaedics, Toledo, OH, United States

6:00 pm - 6:05 pm

331 Treatment of Thoracolumbar Scoliosis by Anterior Fusion with Single Rod without Intersomatic Cage

Speaker: [I. Dockendorff](#)

Authors: I. Dockendorff(1), A. Leiva(1)

(1)Clinica Alemana Universidad del Desarrollo, Orthopaedic, Santiago, Chile

6:06 pm - 6:10 pm

Discussion

6:00 pm - 8:00 pm - Opening Reception

Thursday, May 1, 2014

8:00 am - 8:30 am - General Session: Maintaining Motion with Lumbar TDR

Moderator(s): Rudolf Bertagnoli, MD and Jim Yue, MD

8:00 am - 8:04 am

319 2 Year Results of a Prospective, Randomized, Multicenter Investigational Device Exemption Study of the Activ-L Total Disc Replacement for the Treatment of Single Level Degenerative Disc Disease

Speaker: [R. Garcia](#)

Authors: R. Garcia(1), J.Y. Yue(2), S. Blumenthal(3)

(1)Orthopedic Care Center, Aventura, FL, United States, (2)Yale University School of Medicine, Department of Orthopedic Surgery, New Haven, CT, United States, (3)Texas Back Institute, Plano, TX, United States

- 8:05 am - 8:09 am **111 Semi-constrained (Maverick) versus Unconstrained Compressible (M6-L) Lumbar TDR for Degenerative Disc Disease: 2-year Results of a Prospective Clinical Study**
Speaker: [F. Martens](#)
Authors: F. Martens(1), G. Lesage(1), D. Kools(1), H. Keymeulen(1)
(1)OLV Ziekenhuis, Neurosurgery, Aalst, Belgium
- 8:10 am - 8:14 am **604 Lumbar Total Disc Replacement with a Ball and Socket Metal on Metal Device. Up to 60 Months Follow-up**
Speaker: [L. Pimenta](#)
Authors: R. Amaral(1), T. Coutinho(1), L. Marchi(1), L. Oliveira(1), L. Pimenta(1,2)
(1)Instituto de Patologia da Coluna, São Paulo, Brazil, (2)UCSD San Diego, San Diego, CA, United States
- 8:15 am - 8:19 am **114 10 Years Follow up with MAVERICK TM Total Disc Arthroplasty: Clinical and Radiological Results**
Speaker: [A. Lovi](#)
Authors: A. Lovi(1), M. Brayda-Bruno(1), D. Hugues(2), A. Luca(1), S. Aunoble(2), J.-C. Le Huec(2)
(1)Galeazzi Orthopaedic Institute, Milan, Italy, (2)Bordeaux Segalen University Hospital, Bordeaux, France
- 8:20 am - 8:24 am **19 Prospective Clinical and Radiographic Results of Active L total Disc Replacement at 1-to 4-year Follow-up**
Speaker: [S. Lu](#)
Authors: S.-B. Lu(1)
(1)Capital Medical University, Beijing, China
- 8:25 am - 8:30 am **Discussion**

8:30 am - 10:10 am - Presidential Address

10:10 am - 10:40 am - Break on Exhibit Floor

10:40 pm - 12:00 pm - General Session: Navigation: Applications Spanning from C1 to the Sacrum

Moderator(s): Wei Tian, MD

- 10:40 am - 10:44 am **81 The Utility of MRI Planning in the Use of a Lateral Transpsoas Approach to the Anterior Column in the Lumbar Spine. A Guideline in Surgical Planning for Patient with Indication of Lateral Approach**
Speaker: [H. Nicola](#)
Authors: M. Da Silva(1), H. Nicola(1,2)
(1)Clinica Sanatrix, Spinal Surgery, Caracas, Venezuela, (2)Hospital San Juan de Dios, Spine Surgery, Caracas, Venezuela
- 10:45 am - 10:49 am **579 Reducing Radiation an Order of Magnitude during x-ray Intensive Spine Procedures using a Standard Fluoroscope**
Speaker: [D. Anderson](#)
Authors: D.G. Anderson(1), P. Grossi(2), G. Deol(3), I. Karikari(4), S. Byrd(5), J. Swearingen(5), C. Brown(5), L. Khoo(6)
(1)Thomas Jefferson University, Rothman Institute, Philadelphia, PA, United States, (2)Duke University Health System, Raleigh, NC, United States, (3)Wake Orthopedics, Raleigh, NC, United States, (4)Washington University, St. Louis, MO, United States, (5)Duke University Health System, Durham, NC, United States, (6)The Spine Clinic of Los Angeles, Los Angeles, CA, United States
- 10:50 am - 10:54 am **58 Reduction in Fluoroscopy Time and Radiation Dosage Using an Innovative Guide Wire for Percutaneous Pedicle Screws**
Speaker: [D. Briski](#)
Authors: B.S. Waddell(1), J.M. Zavatsky(1), D. Briski(1)
(1)Ochsner Medical Center, Orthopaedic Surgery, New Orleans, LA, United States
- 10:55 am - 10:59 am **118 Comparison of Open and Percutaneous Lumbar Pedicle Screw Revision Rate Using 3-Dimensional Image Guidance and Intraoperative Computed Tomography**
Speaker: [E. Santos](#)
Authors: E.R.G. Santos(1), S.C. Yson(1), J.N. Sembrano(1), D.W. Polly, Jr.(1)
(1)University of Minnesota, Orthopaedic Surgery, Minneapolis, MN, United States

- 11:00 am - 11:04 am **338 Accuracy and Safety in Screw Placement in the High Cervical Spines: Retrospective Analysis of O-arm® Based Navigation-assisted C1 Lateral Mass and C2 Pedicle Screw**
Speaker: [J. Hur](#)
Authors: J.-W. Hur(1), J.-S. Kim(1), M.-H. Shin(1), S.-J. Park(1), K.-S. Ryu(1), C.-K. Park(2)
(1)Seoul St. Mary's Hospital, The Catholic University of Korea, Neurosurgery, Spine Center, Seoul, Korea, Republic of, (2)Kangdong TeunTeun Hospital, Neurosurgery, Seoul, Korea, Republic of
- 11:05 am - 11:09 am **433 A CT Based Morphological Analysis of SI Joint for Optimal Placement of Fusion Implants**
Speaker: [E. Santos](#)
Authors: J. Herseth(1), D.W. Polly(1), E.R. Santos(1), C.G. Ledonio(1)
(1)University of Minnesota, Orthopaedic Surgery, Minneapolis, MN, United States
- 11:10 am - 11:14 am **134 Minimally Invasive Transverse Lumbar Fusion with Computer Navigational Guidance**
Speaker: [F. Diaz](#)
Authors: F.G. Diaz(1), C.R. Cook(2), R. Tyo(2)
(1)Michigan Head and Spine, Southfield, MI, United States, (2)DC2 Healthcare, Nashville, TN, United States
- 11:15 am - 11:23 am **Discussion**
- 11:24 am - 11:28 am **180 Cervical Spine Instrumentation with the Use of Intra-operative CT O-arm-Based Navigation**
Speaker: [D. Drazin](#)
Authors: D. Drazin(1), J. Hsieh(1), R. Pashman(1), T. Kim(1), J.P. Johnson(1)
(1)Cedars-Sinai Spine Center, Los Angeles, CA, United States
- 11:29 am - 11:33 am **398 Sacro-pelvic Fixation Using the S2 Alar-Iliac (S2AI) Screws in Adult Deformity Patients: Experiences with Two Different Navigation Techniques**
Speaker: [B. Staub](#)
Authors: P.J. Holman(1), X. Hu(2), B. Staub(1), I.H. Lieberman(2)
(1)Houston Methodist Neurological Institute, Houston, TX, United States, (2)Texas Back Institute, Texas Health Presbyterian Hospital Plano, Scoliosis and Spine Tumor Center, Plano, TX, United States
- 11:34 am - 11:38 am **71 Benefits of the Navigated Osteosynthesis versus Fusion in the Treatment of C2 Fractures**
Speaker: [D. Noriega](#)
Authors: D.C. Noriega(1), F. Ardura(2), R. Hernandez Ramajo(2)
(1)University Hospital Valladolid, Orthopedic, Valladolid, Spain, (2)Valladolid University, Orthopedic, Valladolid, Spain
- 11:39 am - 11:43 am **292 Patient Satisfaction and Surgical Outcomes Utilizing 3-D Intra-operative Imaging and Navigation vs. Standard 2-D imaging Systems**
Speaker: [S. Hodges](#)
Authors: S. Hodges(1)
(1)Center for Sports Medicine and Orthopedics, Chattanooga, TN, United States
- 11:44 am - 11:48 am **302 Accuracy and Safety of Pedicle Screw Placement in Spinal Deformity Correction Surgery with Free Hand Technique**
Speaker: [Y. Hai](#)
Authors: Y. Hai(1), B. Ye(1), X. Meng(1)
(1)Beijing Chaoyang Hospital, Capital Medical University, Orthopedic Surgery, Beijing, China
- 11:49 pm - 12:00 pm **Discussion**

12:00 pm - 1:30 pm - Industry Workshops (Not CME)

1:30 pm - 2:30 pm - Symposium: SI Joint Fusion

Moderator(s): Rolando Garcia, MD

- 1:30 pm - 1:35 pm **Intro**
Speaker: Rolando Garcia, MD (Moderator)
- 1:35 pm - 1:50 pm **Con - SI Joint Fusion**
Speaker: Christopher Shaffrey, MD
- 1:50 pm - 2:05 pm **Pro - SI Joint Fusion**

Speaker: Steven Garfin, MD

2:05 pm - 2:20 pm

Case 1 & 2 Presentations

2:20 pm - 2:30 pm

Q&A

2:30 pm - 3:00 pm - General Session: Lumbar Motion Preservation Technology

Moderator(s): Manuel Da Silva, MD and Rolando Garcia, MD

2:30 pm - 2:34 pm

587 Lower Long-term Reoperation Rates and Adjacent Segment Involvement Following coflex® Interlaminar Stabilization Compared to Posterior Lumbar Fusion: Two to Five-year Results from the IDE Trial

Speaker: [J. Auerbach](#)

Authors: J.D. Auerbach(1), T.J. Errico(2), R.J. Davis(3), H. Bae(4)

(1)Bronx-Lebanon Hospital Center, Albert Einstein College of Medicine, Bronx, NY, United States, (2)NYU Hospital for Joint Diseases, New York, NY, United States, (3)Greater Baltimore Neurosurgical Associates, Towson, MD, United States, (4)The Spine Institute, Santa Monica, CA, United States

2:35 pm - 2:39 pm

548 Non Fusion Lumbar Spine Surgery in Parkinson Disease - A Positive View

Speaker: [J. Schroeder](#)

Authors: J.E. Schroeder(1), A. Sama(1), F.E. Cammisa(1), J. Nguyen(1), F. Girardi(1)

(1)Hospital of Special Surgery, Spine Surgery, New York, NY, United States

2:40 pm - 2:44 pm

598 Comparison between Lumbar Laminectomy and Interspinous Devices for Treatment of Lumbar Spinal Stenosis

Speaker: [A. Richter](#)

Authors: A. Richter(1), S. Koutsoumbelis(1), D. Essig(1), S. Merwin(1), M. Goldstein(2), J.

Silber(1)

(1)North Shore LIJ Health System, Dept of Orthopaedic Surgery, New Hyde Park, NY, United States, (2)Orthopaedic Associates of Manhasset, Great Neck, NY, United States

2:45 pm - 2:49 pm

459 ACADIA® Facet Replacement System IDE Study: Preliminary Outcomes at Two and Four Years Postoperative

Speaker: [A. Tahernia](#)

Authors: A.D. Tahernia(1), J. Youssef(2), N. Anand(3), D. Coric(4), K. Baker(5), J. Myer(5)

(1)Desert Orthopedic Center, Rancho Mirage, CA, United States, (2)Durango Orthopedic Associates/Spine Colorado, Durango, CO, United States, (3)Cedars-Sinai Medical Center, Los Angeles, CA, United States, (4)Carolina Neurosurgery and Spine Associates, Charlotte, NC, United States, (5)Globus Medical, Inc., Audubon, PA, United States

2:50 pm - 2:54 pm

132 Comparative Study of Dynesys Dynamic Stabilization System and Posterior Lumbar Interbody Fusion for the Treatment of Lumbar Degenerative Disease: Clinical and Radiologic Outcome of Minimum 5-year Follow-up

Speaker: [J. Hur](#)

Authors: J.-W. Hur(1), J.-S. Kim(1), M.-H. Shin(1), S.-J. Park(1), K.-S. Ryu(1), C.-K. Park(2)

(1)Seoul St. Mary's Hospital, Catholic University of Korea, Neurosurgery, Spine Center, Seoul, Korea, Republic of, (2)Kangdong TeunTeun Hospital, Neurosurgery, Seoul, Korea, Republic of

2:55 pm - 2:59 pm

335 The Results of a Prospective Randomized Controlled Trial Comparing Two Interspinous Process Spacers for the Treatment of Moderate Lumbar Spinal Stenosis

Speaker: [P. Whang](#)

Authors: P.G. Whang(1), L.E. Miller(2), J.E. Block(3)

(1)Yale University School of Medicine, Orthopaedics and Rehabilitation, New Haven, CT, United States, (2)Miller Scientific Consulting, Arden, NC, United States, (3)The Jon Block Group, San Francisco, CA, United States

3:00 - 3:05

Discussion

3:00 pm - 3:30 pm - Awards Ceremony/Transfer of Presidency

3:30 pm - 4:00 pm - Break on Exhibit Floor

4:00 pm - 5:00 pm - General Session: What's New in Tumor, Trauma, and Infections

Moderator(s): Guillermo Bajares, MD

- 4:00 pm - 4:04 pm **507 Medical vs. Surgical Treatment of Spinal Epidural Abscesses in Patients with Normal Neurology or Radicular Deficit**
Speaker: [R. Melikian](#)
Authors: R. Melikian(1), S.D. Kim(2), K.L. Ju(1), D. Zurakowski(3), C.M. Bono(4), M.B. Harris(4)
(1)Harvard Combined Orthopaedic Surgery Residency, Boston, MA, United States, (2)Washington University in St. Louis, St. Louis, MO, United States, (3)Children's Hospital Boston, Boston, MA, United States, (4)Brigham and Women's Hospital, Boston, MA, United States
- 4:05 pm - 4:09 pm **535 Predicting Patients with Concurrent Noncontiguous Spinal Epidural Abscess Lesions**
Speaker: [K. Ju](#)
Authors: K.L. Ju(1), S.D. Kim(2), R. Melikian(1), C.M. Bono(1), M.B. Harris(1)
(1)Brigham and Women's Hospital, Orthopedic Surgery, Boston, MA, United States, (2)Cedars-Sinai, Orthopedic Surgery, Los Angeles, CA, United States
- 4:10 pm - 4:14 pm **175 Improved Positive Identification of the Causative Bacteria in Pyogenic Spondylitis by Use of Five Tissue Samples and Prolonged Incubation**
Speaker: [C. Schaetz](#)
Authors: C.R. Schaetz(1), P. Buechin-Emunds(1)
(1)Orthopedic Clinic Markgroeningen, Spine Center, Markgroeningen, Germany
- 4:15 pm - 4:19 pm **139 Does Intrawound Application of Vancomycin Powder Decrease Surgical Site Infections in Posterior Degenerative Spine Surgeries?**
Speaker: [I. Lieberman](#)
Authors: I.H. Lieberman(1), X. Hu(1)
(1)Texas Back Institute, Texas Health Presbyterian Hospital Plano, Scoliosis and Spine Tumor Center, Plano, TX, United States
- 4:20 pm - 4:24 pm **161 Characterization of the in vitro Osteoconductive and in vivo Anti-biofilm Properties of a PEEK-Silver Zeolite Composite Biomaterial**
Speaker: [P. Whang](#)
Authors: S. Sankar(1), S. Rawulwar(1), S. Dwarakanath(1), J. Crudden(1), P.G. Whang(2)
(1)Difusion Technologies Inc., Georgetown, TX, United States, (2)Yale University School of Medicine, Department of Orthopaedics and Rehabilitation, New Haven, TX, United States
- 4:25 pm - 4:29 pm **283 Is it Feasible to Treat Unstable Hangman's Fracture via the Standard Anterior Retropharyngeal Approach?**
Speaker: [H. Hur](#)
Authors: H. Hur(1), J.K. Lee(1), J.W. Jang(1), S.H. Kim(1)
(1)Chonnam National University Hospital, Neurosurgery, Gwangju, Korea, Republic of
- 4:30 pm - 4:34 pm **553 Clinical Features of Percutaneous Hemiverebroplasty in Osteoporotic Vertebral Compression Fractures**
Speaker: [K. Park](#)
Authors: K.H. Park(1), J. Ryu(1), T.W. Kim(1), M.P. Chi(1), J.O. Kim(1)
(1)VHS Medical Center, Neurosurgery, Seoul, Korea, Republic of
- 4:35 pm - 4:39 pm **312 Percutaneous Short Fixation (PeSFix) in the Treatment of Unstable Thoracolumbar Fractures. Clinical and Radiological Outcome in Long Term Follow up of 13 Patients with a Spinal Canal Invasion up to 86% without Neurological Deficits**
Speaker: [M. Cimatti](#)
Authors: M. Cimatti(1), S. Forcato(1), F.M. Polli(1), L. De Martino(1), M. Miscusi(2), A. Frati(1), A. Raco(1)
(1)Sapienza of Rome, Neurosurgery, Rome, Italy, (2)Sapienza, Latina, Italy
- 4:40 pm - 4:44 pm **532 Management of Type A3 Thoracolumbar Burst Fractures with a New Posterior Reduction Technique and Short Segment Transpedicular Instrumentation**
Speaker: [M. Inanmaz](#)
Authors: M.E. Inanmaz(1), K.C. Kose(1), H. Basar(1), C. Isik(2), I. Caliskan(1), E. Bal(1)
(1)Sakarya University, Adapazari, Turkey, (2)Bolu Izzet Baysal University, Bolu, Turkey
- 4:45 pm - 4:49 pm **342 A Peri-operative Cost Analysis Comparing Single-level Minimally Invasive and Open Transforaminal Lumbar Interbody Fusion**
Speaker: [K. Singh](#)
Authors: K. Singh(1), S.V. Nandyala(1), A.J. Marquez-Lara(1), S.J. Fineberg(1), G.B. Andersson(1), M. Noureldin(1), F.M. Phillips(1)
(1)Rush University Medical Center, Orthopaedic Surgery, Chicago, IL, United States
- 4:50 pm - 4:54 pm **591 Low Grade Lumbar Degenerative Spondylolisthesis Treated with the eXtreme Lateral Interbody Fusion (XLIF®) and Ipsilateral Pedicle Screws, Outcomes and Experience after Two Years**
Speaker: [G. Bajares](#)

Authors: G. Bajares(1,2), A. Pérez-Oliva(1,2), N. Cruz(1,2), A. Acosta(2), A. Montero(1), D. Molina(2)

(1)Unidad de Columna, Caracas, Venezuela, (2)Instituto de Columna Caracas, Caracas, Venezuela

4:55 pm - 4:59 pm

11 Treatment of Patients with Osteoporotic Compression Fractures Treated with Balloon Kyphoplasty or RF-kyphoplasty: 36 Months Follow-up

Speaker: [R. Bornemann](#)

Authors: R. Pflugmacher(1), R. Bornemann(1), T.R. Jansen(1), K. Kabir(1), D.C. Wirtz(1)

(1)Universitätsklinikum Bonn, Klinik und Poliklinik für Orthopädie und Unfallchirurgie, Bonn, Germany

5:00 pm - 5:04 pm

462 The Effects of Cage and Instrumentation Type on Radiographic and Clinical Outcomes in Extreme Lateral Interbody Fusion

Speaker: [A. Tohmeh](#)

Authors: D. Khorsand(1), A.G. Tohmeh(1), X. Zielinski(2)

(1)Northwest Orthopaedic Specialists, Spokane, WA, United States, (2)Inland Imaging, Radiology, Spokane, WA, United States

5:05 pm - 5:09 pm

603 Lateral Transpoas Access to the Lumbar Spine for Revision Surgery

Speaker: [R. Amaral](#)

Authors: R. Amaral(1), T. Coutinho(1), L. Marchi(1), R. Jensen(1), L. Pimenta(1,2)

(1)Instituto de Patologia da Coluna, São Paulo, Brazil, (2)UCSD San Diego, San Diego, CA, United States

5:10 pm - 5:20 pm

Discussion

5:00 pm - 6:00 pm -World Café - Room 1 - Topic: Sagittal Balance, Case Study - Moderator(s): Juan Uribe, MD

5:00 pm - 6:00 pm -World Café - Room 2 - Multi Level Cervical Degitive Disc Des - Moderator(s): Michael Wang, MD

Friday, May 2, 2014

8:00 am - 9:00 am - General Session: Minimally Invasive Spine Surgery

Moderator(s): Choll Kim, MD, PhD and Cristiano Menezes, MD

8:00 am - 8:04 am

249 Endoscopic Trans-iliac Approach to L5-S1 Disc and Foramen – A Report on Clinical Experience

Speaker: [S. Osman](#)

Authors: S.G. Osman(1), S. Sherlekar(2), A. Malik(3), C. Winters(4), P.K. Grewal(2), N.

Gemechu(5), M. Narayanan(4)

(1)American Spine Center, Orthopedic Surrgerly, Frederick, MD, United States, (2)American Spine Center, Anesthesia, Frederick, MD, United States, (3)American Spine Center, Physiatry, Frederick, MD, United States, (4)American Spine Center, Neurosurgery, Frederick, MD, United States, (5)American Spine Center, Statistics, Frederick, MD, United States

8:05 am - 8:09 am

185 The Percutaneous Transforaminal Endoscopic Decompression Approach Is Safe and Effective for the Treatment of FBSS Due to Recurrent HNP and Lateral Stenosis

Speaker: [A. Yeung](#)

Authors: A.T. Yeung(1,2)

(1)Desert Institute for Spine Care, Phoenix, AZ, United States, (2)University of New Mexico School of Medicine, Albuquerque, NM, United States

8:10 am - 8:14 am

362 In-vivo Endoscopic Visualization of Pain Generators in the Lumbar Spine

Speaker: [A. Yeung](#)

Authors: A.T. Yeung(1,2)

(1)Desert Institute for Spine Care, Phoenix, AZ, United States, (2)University of New Mexico School of Medicine, Albuquerque, NM, United States

8:15 am - 8:19 am

614 The Treatment of Single Level Multi-Focal Subarticular, Paracentral and Far Lateral Lumbar Disc Herniations: The Single Incision Multi Focal Endoscopic Surgery Solution

Speaker: [J. Yue](#)

Authors: J.J. Yue(1), D. Scott(1), X. Han(2)

(1)Yale University School of Medicine, Department of Orthopaedics and Rehabilitation, New Haven, CT, United States, (2)Beijing Jishuitan Hospital, Fourth Clinical Medical College of Peking

University, Department of Spine Surgery, Beijing, China

- 8:20 am - 8:24 am **471 Microendoscopic Minimally Invasive Decompression for the Treatment of Lumbar Spinal Stenosis. Overview of Early and Long-term Outcomes**
Speaker: [H. Nicola](#)
Authors: M. Da Silva(1), D. Onay(2), H. Nicola(1)
(1)Clinica Sanatrix, Spine Surgery, Caracas, Venezuela, (2)Clinica Sanatrix, Caracas, Venezuela
- 8:25 am - 8:29 am **592 Endoscopic Lumbar Foraminoplasty: A Cadaveric Study**
Speaker: [C. Hofstetter](#)
Authors: C.P. Hofstetter(1), A. Evins(2), M. Banu(2), I. Njoku(2), R. Hartl(2), M. Wang(1)
(1)University of Miami Miller School of Medicine, Department of Neurological Surgery, Miami, FL, United States, (2)Weill Cornell Brain and Spine Center, Department of Neurological Surgery, New York, NY, United States
- 8:30 am - 8:34 am **14 Endoscopic Anterior Cervical Discectomy without Fusion through a Two Millimeter Opening**
Speaker: [D. Ditsworth](#)
Authors: D. Ditsworth(1), L. Lombardi(1), M. Levesque(1)
(1)Back Institute, Los Angeles, CA, United States
- 8:35 am - 8:39 am **25 Structural Preservation Percutaneous Endoscopic Lumbar Interlaminar Discectomy: Ligamentum Flavum Splitting Technique + Fissure Fragmentectomy and Sealing Technique**
Speaker: [H. Kim](#)
Authors: H.S. Kim(1), S.J. Jeong(1), H.J. Ahn(1), K.H. Jeon(1), W.J. Choi(1), K.T. Kim(1), H.S. Wang(2), C.I. Ju(2), S.W. Kim(2), S.M. Lee(2), H. Shin(2)
(1)Hurisarang Spine Hospital, Neurosurgery, Daejeon-Si, Korea, Republic of, (2)College of Medicine, Chosun University, Neurosurgery, Gwangju-Si, Korea, Republic of
- 8:40 am - 8:44 am **27 An Evidence Based Approach to Epiduroscopic Laser Decompression in Lumbar Disc Herniation**
Speaker: [K. Lim](#)
Authors: K.T. Lim(1)
(1)Cheonan Woori Spine Hospital, Spine Institutes, Cheonan, Korea, Republic of
- 8:45 am - 8:49 am **83 Minimally Invasive Posterior Cervical Decompression Using Tubular Retractor: The Technical Note and Early Clinical Outcome**
Speaker: [J. Hur](#)
Authors: J.-W. Hur(1), J.-S. Kim(1), M.-H. Shin(1), S.-J. Park(1), K.-S. Ryu(1), C.-K. Park(2)
(1)Seoul St. Mary's Hospital, Catholic University of Korea, Neurosurgery, Seoul, Korea, Republic of, (2)Kangdong TeunTeun Hospital, Neurosurgery, Seoul, Korea, Republic of
- 8:50 am - 8:54 am **522 Intraoperative 3D Navigation Assisted Minimally Invasive Techniques in Spine Surgery**
Speaker: [W. Tian](#)
Authors: W. Tian(1), Y. Liu(1)
(1)Beijing Jishuitan Hospital, Spine Surgery, Beijing, China

9:00 am - 10:00 am - Symposium: Common Problems in the Management of Lumbar Degenerative Deformity

Moderator(s): Steven Glassman, MD

- 9:00 am - 9:15 am **Every Case is a Deformity Case - How to avoid turning simple deformity into complex deformity.**
Speaker: Hee-Kit Wong, MD, PhD
- 9:15 am - 9:30 am **Management of Common Complications**
Speaker: Tom Errico, MD
- 9:30 am - 9:45 am **Getting a Handle on the PJK Epidemic**
Speaker: Steven Glassman, MD
- 9:45 am - 10:00 am **Q&A**

10:00 am - 10:30 am - Break on Exhibit Floor

10:30 am - 12:00 pm - General Session: Biomechanics

Moderator(s): Lisa Ferrara, PhD and Brandon Santoni, PhD

- 10:30 am - 10:34 am **431 Biomechanical Evaluation of Transfacet Pedicle Screw Constructs for Lumbar Fixation after Bilateral Decompression**
Speaker: [H. Soriano-Baron](#)
Authors: H.E. Soriano-Baron(1), N.G. Rodriguez-Martinez(1), C.D. Chaput(2), P.M. Reyes(1), A.G.U. Newcomb(1), N.R. Crawford(1), H.D. Link(3)
(1)Barrow Neurological Institute, Spinal Biomechanics, Phoenix, AZ, United States, (2)Scott & White Healthcare, Temple, TX, United States, (3)FacetLink, Rockaway, NJ, United States
- 10:35 am - 10:39 am **564 Titanium Truss Structures as Conduits for Bone Healing through Multiplanar Stress Distribution**
Speaker: [L. Ferrara](#)
Authors: L.A. Ferrara(1), A. Kiapor(2)
(1)OrthoKinetic Technologies, LLC, Southport, NC, United States, (2)University of Toledo, Toledo, OH, United States
- 10:40 am - 10:44 am **468 Biomechanical Comparison of a Novel Expandable-compressible Interspinous Device and Pedicle Screws Using Interbody Cage Load and Segmental Lordosis**
Speaker: [R. DenHaese](#)
Authors: A. Gandhi(1), R. Fredricey(1), D. Karahalios(2), S. Chang(3), R. DenHaese(4), A. Cappuccino(4)
(1)Lanx, Inc, Broomfield, CO, United States, (2)North Shore University Health System, Evanston, IL, United States, (3)Barrow Neurological Institute, Phoenix, AZ, United States, (4)Buffalo Spine, Buffalo, NY, United States
- 10:45 am - 10:49 am **594 In vitro Biomechanical Study to Assess Stabilization of Type II Odontoid Fracture**
Speaker: [R. Daniel](#)
Authors: R. Daniel(1), J. Duff(1), M. Hussain(2), N. Klocke(2), B. Bucklen(2)
(1)Service de Neurochirurgie Centre Hospitalier Universitaire Vaudois, Lausanne, Switzerland, (2)Globus Medical Inc, Audubon, PA, United States
- 10:50 am - 10:54 am **420 Biomechanical Evaluation of a Translaminar Facet / Transfacet Pedicle Screw Construct for Lumbar Fixation after Unilateral Decompression**
Speaker: [H. Soriano-Baron](#)
Authors: H.E. Soriano-Baron(1), N.G. Rodriguez-Martinez(1), C.D. Chaput(2), P.M. Reyes(1), A.G.U. Newcomb(1), N.R. Crawford(1), H.D. Link(3)
(1)Barrow Neurological Institute, Spinal Biomechanics, Phoenix, AZ, United States, (2)Scott & White Healthcare, Temple, TX, United States, (3)FacetLink, Rockaway, NJ, United States
- 10:55 am - 10:59 am **390 Feasibility and Biomechanical Performance of a Novel Transdiscal Screw System for one Level in Non-spondylolisthetic Lumbar Fusion: An in vitro Investigation**
Speaker: [J. Doulgeris](#)
Authors: J. Doulgeris(1,2), S. Gonzalez-Blohm(1), K. Aghayev(1), W. Lee III(3), J. Waddell(1), F. Vrionis(1)
(1)Moffitt Cancer Center, Neuro-Oncology/Neurosurgery, Tampa, FL, United States, (2)University of South Florida, Mechanical Engineering, Tampa, FL, United States, (3)University of South Florida, Dept of Chemical & Biomedical Engineering, Tampa, FL, United States
- 11:00 am - 11:04 am **565 PEEK Translaminar Facet Screws Maintains Stability of the Lumbar Spine Better than Titanium Translaminar Screws**
Speaker: [A.K. Agarwal](#)
Authors: M. Kodigudla(1), D. Desai(1), A. Agarwal(1), V. Goel(1), A.K. Agarwal(1), W. Guilherme(2)
(1)University of Toledo, Bioengineering, Toledo, OH, United States, (2)Spine Soft Fusion, Sao Paulo, Brazil
- 11:05 am - 11:15 am **Discussion**
- 11:16 am - 11:20 am **456 Kinematic Evaluation of a Next Generation Lateral Plate in XLIF Single-position Supplemental Fixation**
Speaker: [W. Smith](#)
Authors: W.D. Smith(1), S. Ryu(2), T.M. Sweeney(3), D.D. Frazier(4), A.W. Turner(5)
(1)University Medical Center of Southern Nevada, Department of Neurosurgery, Las Vegas, NV, United States, (2)Palo Alto Medical Foundation, Stanford University Hospital, Palo Alto, CA, United States, (3)Southeastern Spine Center & Research Institute, Sarasota, FL, United States, (4)Orthopaedic Associates of New York P.C., New York, NY, United States, (5)NuVasive, Inc., San Diego, CA, United States
- 11:21 am - 11:25 am **385 In vitro Evaluation of a Lateral Expandable Cage and its Comparison with a Static Device for Lumbar Interbody Fusion: A Biomechanical Investigation**
Speaker: [S. Gonzalez-Blohm](#)
Authors: S.A. Gonzalez-Blohm(1), J.J. Doulgeris(1,2), K. Aghayev(1), W.E. Lee III(3), J. Laun(4),
F. Vrionis(1)

F.D. Vrionis(1)

(1)Moffitt Cancer Center, Neuro-Oncology / Neurosurgery, Tampa, FL, United States, (2)University of South Florida, Mechanical Engineering, Tampa, FL, United States, (3)University of South Florida, Chemical & Biomedical Engineering, Tampa, FL, United States, (4)University of South Florida, Morsani College of Medicine, Tampa, FL, United States

- 11:26 am - 11:30 am **92 Is L5-S1 Motion Segment Different from the Rest? – A Radiological Kinematic Study of 84 Patients with Chronic Low Back Pain**
Speaker: [A. Sabnis](#)
Authors: A.B. Sabnis(1), U. Chamoli(1), A.D. Diwan(1)
(1)St George Clinical School, UNSW, Orthopaedics, Kogarah, NSW, Australia
- 11:31 am - 11:35 am **399 Axial Pullout Strength of Plasmapore XP Coated PEEK Implants in Sheep: A Comparative Biomechanical 12 Week Survival Study**
Speaker: [B. Cheng](#)
Authors: B.C. Cheng(1,2), D.J. Cook(2), A. Flintrop(3), D. Lemesh(3), C. Winiarski(3), H. Aberman(4), C. Wing(3), B. Spiro(3)
(1)Drexel University, Neurosurgery, Mars, PA, United States, (2)Allegheny Health Network, Neurosurgery, Pittsburgh, PA, United States, (3)Aesculap, Center Valley, PA, United States, (4)Thomas D. Morris, Inc., Malvern, PA, United States
- 11:36 am - 11:40 am **449 Biomechanical Analysis of Short vs. Long Segment Posterior Instrumentation in Experimentally-produced Thoracic Vertebral Burst Fractures (Two-column Injury), with Pedicle vs. Cortical Screws**
Speaker: [A. Savardekar](#)
Authors: A.R. Savardekar(1), S.W. Chang(1), H.E. Soriano-Baron(1), N.G. Rodriguez-Martinez(1), A.G.U.S. Newcomb(1), P.M. Reyes(1), K.R. Detranaltes(1), R.D. Lefevre(1), N.R. Crawford(1)
(1)Barrow Neurological Institute, Spinal Biomechanics, Phoenix, AZ, United States
- 11:41 am - 11:45 am **370 Improving the PEEK - Bone Interface Using a Titanium Coating**
Speaker: [W. Walsh](#)
Authors: W.R. Walsh(1), N. Bertollo(1), C. Christou(1)
(1)University of New South Wales, Surgical & Orthopaedic Research Laboratories, Randwick, NSW, Australia
- 11:46 am - 11:50 am **170 Increased Intraoperative Epidural Pressure in Lumbar Spinal Stenosis Patients with Positive Nerve Root Sedimentation Sign**
Speaker: [T. Barz](#)
Authors: T. Barz(1), M. Melloh(2), L.P. Staub(3), S. Lord(4), H.R. Merk(5)
(1)Asklepios Klinikum Uckermark, Orthopädische Klinik, Schwedt, Germany, (2)University of Western Australia, Western Australian Institute for Medical Research (WAIMR), Nedlands, WA, Australia, (3)University of Bern, Senior Research Associate, Institute for Evaluative Research in Orthopaedic Surgery, Bern, Switzerland, (4)University of Sydney, NHMRC Clinical Trials Centre, Sydney, NSW, Australia, (5)University of Greifswald, Department of Orthopaedic Surgery, Greifswald, Germany
- 11:51 am - 11:55 am **413 Sub-occipital Hyperextension as a Postural Consequence of Global Cervical Sagittal Imbalance – A Predictive Model**
Speaker: [A. Patwardhan](#)
Authors: A. Patwardhan(1), R. Havey(1), M. Muriuki(2), S. Khayatzadeh(2), L. Voronov(1), G. Carandang(2), N.-L. Nguyen(1), A. Ghanayem(1), D. Schuit(3), W. Sears(4)
(1)Loyola University Chicago, Orthopaedic Surgery and Rehabilitation, Maywood, IL, United States, (2)Edward Hines Jr. VA Hospital, Hines, IL, United States, (3)Governors State University, University Park, IL, United States, (4)Royal North Shore Hospital, Sydney, NSW, Australia
- 11:56 am - 12:00 pm **Discussion**

10:30 am - 12:00 pm - General Session: Lightning Round: Spine Potpourri

Moderator(s): Karin Buettner-Janz, MD, PhD

- 10:30 am - 10:33 am **405 Risk Factors of the Late Onset Paraplegia Secondary to Post-tubercular Kyphotic Deformity in the Thoracic or Thoracolumbar Spine**
Speaker: [C. Sun](#)
Authors: C. Sun(1), Z. Chen(1)
(1)Peking University Third Hospital, Orthopaedic Surgery Department, Beijing, China
- 10:34 am - 10:37 am **574 Unilateral Tubular Approach for Bilateral Laminectomy: Effect on Ipsilateral and Contralateral Butttock and Leg Pain**
Speaker: [M. Alimi](#)
Authors: M. Alimi(1), C. P. Hefetz(1), C. T. Cook(2), J. Nishiy(2), D. Hefetz(1)

AUTHORS: M. Amin(1), C.F. Horstetter(1), G.-I. Cong(2), I. Njoku(2), R. Haru(1)
(1)Weill Cornell Brain and Spine Center, Neurological Surgery, New York, NY, United States,
(2)Weill Cornell Medical College, New York, NY, United States

- 10:38 am - 10:41 am **562 Minimally Invasive Uniportal Multilevel Cervical Decompression vs Laminoplasty in Treatment for Cervical Stenosis. Clinical and Radiological Results**
Speaker: [C. Arias Pesantez](#)
Authors: C.F. Arias Pesantez(1), C.R. Arias Solano(1)
(1)Del Rio University Hospital, Spine Surgery, Cuenca, Ecuador
- 10:42 am - 10:45 am **20 The Mid- and Long-term Follow-up of Total Disc Replacement for Lumbar Intervertebral Disc Degenerative Diseases**
Speaker: [S. Lu](#)
Authors: S.-B. Lu(1)
(1)Capital Medical University, Beijing, China
- 10:46 am - 10:49 am **288 ACDF Survivorship using a Combined Integrated Plate, PEEK Interbody Spacer and Integral Screws: 460 Levels in 238 Consecutive Patients**
Speaker: [P. McAfee](#)
Authors: P.C. McAfee(1), B.W. Cunningham(1), I.L. Fedder(1), M. Dabbah(1), L. Chotikul(1), E. Shucosky(1), L. Race(1)
(1)University of Maryland St Joseph Medical Center, Orthopaedic Surgery, Towson, MD, United States
- 10:50 am - 10:53 am **246 5 Year Outcomes and Survivorship Analysis of Posterior Pedicle Screw Non-fusion Stabilization**
Speaker: [N. Anand](#)
Authors: N. Anand(1), B. Khandehroo(1), E. Baron(1), R.B. Cohen(1), J.E. Cohen(1), S. Kahwaty(1)
(1)Cedars-Sinai Medical Center, Spine Center, Los Angeles, CA, United States
- 10:54 am - 11:07 am **Discussion**
- 11:08 am - 11:11 am **41 Intraoperative Esophageal Perforation: Incidence, Risk Factors and Outcomes following Anterior Cervical Spine Surgery**
Speaker: [K. Singh](#)
Authors: A.J. Marquez-Lara(1), S.V. Nandyala(1), S.J. Fineberg(1), M. Nouredin(1), K. Singh(1)
(1)Rush University Medical Center, Orthopaedic Surgery, Chicago, IL, United States
- 11:12 am - 11:15 am **262 Outcome Measures of an Intracanal, Endoscopic Transforaminal Decompression Technique**
Speaker: [J. Sclafani](#)
Authors: J.A. Sclafani(1), K. Raiszadeh(1), K. Liang(2), C.W. Kim(1)
(1)Spine Institute of San Diego, San Diego, CA, United States, (2)Milestone Research Organization, San Diego, CA, United States
- 11:16 am - 11:19 am **248 The Efficacy and Safety of Sodium Hyaluronate with 1,4-Butanediol Diglycidyl Ether Compared to Sodium Carboxymethylcellulose in Preventing Adhesion Formation in Patients after Lumbar Discectomy: A Randomized, Multicenter, Single Blind, Active-controlled Clinical Study**
Speaker: [G. Ji](#)
Authors: G.Y. Ji(1,2,3), C.H. Oh(1,2), B.G. Moon(4), S. Yi(3), I.B. Han(5), D.H. Heo(6), K.-T. Kim(7), D.A. Shin(3)
(1)Guro Teun Teun Hospital, Neurosurgery, Seoul, Korea, Republic of, (2)Spine and Joint Research Institute, Guro Teun Teun Hospital, Seoul, Korea, Republic of, (3)Yonsei University College of Medicine, Neurosurgery, Seoul, Korea, Republic of, (4)Eulji Hospital, Eulji University School of Medicine, Neurosurgery, Seoul, Korea, Republic of, (5)CHA University, Bundang CHA Medical Center, Neurosurgery, Sungnam, Korea, Republic of, (6)The Leon Wiltse Memorial Hospital, Neurosurgery, Suwon, Korea, Republic of, (7)Kyung Hee University School of Medicine, Orthopedic Surgery, Seoul, Korea, Republic of
- 11:20 am - 11:23 am **75 Disc Degeneration Analysis after VCF with Diffusion-weighted MRI**
Speaker: [D. Noriega Gonzalez](#)
Authors: D.C. Noriega Gonzalez(1), F. Rodriguez Monsalve(1), V. Luengos(1), R. Hernandez Ramajo(1), F. Ardura(1), I. Sanchez Lite(2)
(1)Valladolid University, Orthopedic, Valladolid, Spain, (2)Valladolid University, Radiology, Valladolid, Spain
- 11:24 am - 11:27 am **104 Preoperative Embolization vs. Local Hemostatic Agents in Spinal Surgery of Hypervascular Metastases**
Speaker: [N. Zaborovskii](#)
Authors: D. Ptashnikov(1), V. Usikov(1), D. Mikhaylov(1), S. Masevnin(1), N. Zaborovskii(1)

(1)Russian Scientific Research Institute of Traumatology and Orthopedics named after R.R. Vreden, Neuroortopedics with Bone Oncology, Saint Petersburg, Russian Federation

11:30 am - 11:33 am

280 The Radiologic and Clinical Results of Percutaneous Pedicle Screw Fixation after Spinal Canal Decompression in Thoracolumbar Burst Fractures with Neurological Impairment

Speaker: [J. Lee](#)

Authors: J.-K. Lee(1), J.-W. Jang(1), H. Hur(1), S.-H. Kim(1)

(1)Chonnam National University Hospital, Neurosurgery, Gwangju, Korea, Republic of

11:34 am - 11:37 am

452 Staged Reconstruction of Adult Thoracolumbar Kyphoscoliotic Deformity with XLIF and Hybrid Posterior Instrumentation

Speaker: [A. Tohmeh](#)

Authors: A.G. Tohmeh(1), A. Proctor(1), D. Khorsand(1)

(1)Northwest Orthopaedic Specialists, Spokane, WA, United States

11:38 pm - 12:00 pm

Discussion

12:00 pm - 1:00 pm - Lunch Break

1:00 pm - 2:15 pm - General Session: New Technology in Spine Surgery

Moderator(s): Hansen Yuan, MD and Huilin Yang, MD

1:00 pm - 1:04 pm

194 Implant Materials Generate Different Peri-implant Inflammatory Factors: PEEK Promotes Fibrosis and Micro-textured Titanium Promotes Osteogenic Factors

Speaker: [P. Slosar](#)

Authors: R. Olivares-Navarrete(1,2), S.L. Hyzy(1,2), P.J. Slosar(3), J.M. Schneider(4), P.F. Ullrich(5), B.D. Boyan(1,2)

(1)Georgia Institute of Technology, Biomedical Engineering, Atlanta, GA, United States, (2)Virginia Commonwealth University, Engineering, Richmond, VA, United States, (3)San Francisco Spine Institute, Daly City, CA, United States, (4)Titan Spine, Mequon, WI, United States, (5)NeuroSpine Center of Wisconsin, Appleton, WI, United States

1:05 pm - 1:09 pm

545 In-vivo MR Spectroscopy of Painful versus Non-painful Lumbar Discs – An Intra-Patient Comparative Algorithm for Non-invasive, Objectively Quantified Painful Disc Diagnosis

Speaker: [M. Gornet](#)

Authors: J.C. Peacock(1), M.F. Gornet(2), J.C. Lotz(1,3), D.S. Bradford(1), J.P. Claude(4), P. Kane(4), D. Stewart(5), F.W. Schranck(6)

(1)Nocimed, LLC, Management, San Carlos, CA, United States, (2)The Orthopedic Center of Saint Louis, Staff Physician, Chesterfield, MO, United States, (3)University of California, San Francisco Medical Center, Orthopedic Surgery, San Francisco, CA, United States, (4)Nocimed, LLC, Engineering, San Carlos, CA, United States, (5)MRI Partners of Chesterfield, MRI Imaging, Chesterfield, MO, United States, (6)SPIRITT Research, Management, St. Louis, MO, United States

1:10 pm - 1:14 pm

130 Use of Amniotic Membrane Anti-adhesion Barrier for Lumbar Discectomy

Speaker: [J. Shellock](#)

Authors: J. Beihn(1), J. Shellock(2), D.D. Ohnmeiss(1), R.D. Guyer(2), J.E. Zigler(2)

(1)Texas Back Institute Research Foundation, Plano, TX, United States, (2)Texas Back Institute, Plano, TX, United States

1:15 pm - 1:19 pm

361 Free Hand Thoracic Pedicle Screw Technique Using a Uniform Entry Point and Trajectory for All Levels: Preliminary Clinical Experience

Speaker: [V. Fennell](#)

Authors: V. Fennell(1), J. Rice(1), D. Stidd(1), A. Baaj(1)

(1)University of Arizona, Division of Neurosurgery, Tucson, AZ, United States

1:20 pm - 1:24 pm

300 Accuracy, Safety & Intraoperative Radiation in Robot Guided Percutaneous Screw Placement

Speaker: [B. Santoni](#)

Authors: A.E. Castellvi(1), M. Graham(1), C. James(2), R. Murtagh(3), A. Cabezas(2), B. Santoni(3)

(1)Florida Orthopaedic Institute, Center for Spinal Disorders, Tampa, FL, United States, (2)Foundation for Orthopaedic Research and Education, Biomechanics Lab, Tampa, FL, United States, (3)Tower Diagnostics, Radiology, Tampa, FL, United States

1:25 pm - 1:29 pm

216 OptiMesh Graft Containment Device vs. Allograft Spacer for Lumbar Interbody Fusion: Prospective Randomized Comparison

Speaker: [M. Krag](#)
Authors: M. Krag(1)
(1)University of Vermont, Orthopaedics & Rehabilitation, Burlington, VT, United States

1:30 pm - 1:34 pm **364 The Role of Strontium (Sr) as A Bioactive Cement in the Formation of New Bone for the Treatment of Osteoporotic Vertebral Compression Fractures (VCFs)**

Speaker: [A. Darwono](#)
Authors: A.B. Darwono(1)
(1)Gading Pluit Hospital / Tarumanagara University, Orthopaedic Department, Jakarta Utara, Indonesia

1:35 pm - 1:40 pm

Discussion

1:41 pm - 1:45 pm

202 Accuracy and Learning Curve of Robotic Assisted Pedicle Screw Placement in Spine Surgery

Speaker: [I. Lieberman](#)
Authors: X. Hu(1), I.H. Lieberman(1)
(1)Texas Back Institute, Texas Health Presbyterian Hospital Plano, Scoliosis and Spine Tumor Center, Plano, TX, United States

1:46 pm - 1:50 pm

97 Does PediGuard (Electrical Conductivity Device) Assist with the Accuracy of Pedicle Screw Placement in the Thoracic Spine? A Prospective Randomized Study

Speaker: [P. Tropiano](#)
Authors: P. Tropiano(1), B. Blondel(1)
(1)Université Aix-Marseille, Orthopaedic Surgery, Marseille, France

1:51 pm - 1:55 pm

394 Remote Control Injection System (RCIS) Could Reduce the Radiation Exposure during Percutaneous Kyphoplasty(PKP): A Prospective Randomized Controlled Study

Speaker: [Z. Zheng](#)
Authors: Z. Zheng(1), J. Wang(1), H. Liu(1), B. Li(1)
(1)First Affiliated Hospital of Sun Yat-sen University, Department of Spine Surgery, Guangzhou, China

1:56 pm - 2:00 pm

407 For Sacroiliac Join Fusion what Is the Relative Work Effort of Open versus Minimally Invasive Techniques?

Speaker: [T. Holt](#)
Authors: D.W. Polly(1), C.G. Ledonio(1), I. Ninkovic(1), M.G. Moore(2), T.A. Holt(3), A. Geissele(4), J.E. Donner(5)
(1)University of Minnesota, Orthopaedic Surgery, Minneapolis, MN, United States, (2)Valley Hospital, Ridgewood, NJ, United States, (3)Spine Center, Montgomery, AL, United States, (4)Carolina Orthopaedi Specialists, Taylorsville, NC, United States, (5)Rocky Mountain Associates in Orthopedic Medicine P.C., Johnstown, CO, United States

2:01 pm - 2:05 pm

563 Mechanical Transduction in a Truss Lumbar Fusion Cage: FEA Results Match Mechanically Responsive Metrics of Bone Formation

Speaker: [T. Ganey](#)
Authors: M. Truman(1), L. Ferrara(2), J. Hunt(3), T.M. Ganey(4)
(1)Robson Forensics, Warsaw, IN, United States, (2)Orthokinetic Technologies, Research and Development, Southport, NC, United States, (3)4WEB Medical, Dallas, TX, United States, (4)Atlanta Medical Center, Orthopaedic Surgery, Atlanta, GA, United States

2:06 pm - 2:15 pm

Discussion

2:15 pm - 3:30 pm - General Session: MIS Complications

Moderator(s): Ali Araghi, MD

2:15 pm - 2:20 pm

599 Lateral Lumbar Interbody Fusion for the Correction of Spondylolisthesis and Adult Degenerative Scoliosis in High-Risk Patients: Early Results and Complications

Speaker: [B. Waddell](#)
Authors: B.S. Waddell(1), D.C. Briski(2), G.E. Godoy(1), J.M. Zavatsky(1)
(1)Ochsner Clinic Foundation, New Orleans, LA, United States, (2)University of Queensland School of Medicine, Brisbane, QLD, Australia

2:21 pm - 2:26 pm

443 Postoperative Leg Pain and/or Dysesthesia at One Year Follow-up Following Extreme Lateral Interbody Fusion at a Single Site

Speaker: [J. Youssef](#)
Authors: J.A. Youssef(1), D. Orndorff(1), M. Scott(1), R. Ebner(1), A. Knewitz(1)
(1)Durango Orthopedic Associates/Spine Colorado, Spine Surgery, Durango, CO, United States

2:27 pm - 2:32 pm

116 Minimally Invasive versus Open Transforaminal Lumbar Interbody Fusion:

Comparison of Clinical Outcomes among Obese Patients

Speaker: [S. Terman](#)

Authors: S.W. Terman(1), T.J. Yee(1), D. Lau(2), F. La Marca(3), P. Park(3)
(1)University of Michigan, Medical School, Ann Arbor, MI, United States, (2)University of California, Neurosurgery, San Francisco, CA, United States, (3)University of Michigan, Neurosurgery, Ann Arbor, MI, United States

2:33 pm - 2:38 pm

308 Minimally Invasive Transforaminal Lumbar Interbody Fusion: One Surgeon's Learning Curve

Speaker: [K. Singh](#)

Authors: S.V. Nandyala(1), A.J. Marquez-Lara(1), S.J. Fineberg(1), M. Pelton(1), M. Noureldin(1), K. Singh(1)
(1)Rush University Medical Center, Orthopaedic Surgery, Chicago, IL, United States

2:39 pm - 2:44 pm

85 The Incidence and the Risk Factors of Injury to the Lateral Femoral Cutaneous Nerve after Posterior Spine Surgery

Speaker: [H. Tobimatsu](#)

Authors: H. Tobimatsu(1), H. Aono(1), Y. Nagamoto(1)
(1)Osaka National Hospital, Orthopaedics, Osaka, Japan

2:45 pm - 2:55 pm

Discussion

2:56 pm - 3:01 pm

69 Incidence of Lumbar Plexopathy Utilizing Mechanomyography for Transposas Lateral Interbody Fusion

Speaker: [J. Zavatsky](#)

Authors: J.M. Zavatsky(1), A. Sama(2), A. Wollowick(3), B.S. Waddell(1), M. Etienne(1), F. Zahrawi(4)
(1)Ochsner Medical Center, Orthopaedic Surgery, New Orleans, LA, United States, (2)Hospital for Special Surgery, Orthopaedic Surgery, New York, NY, United States, (3)Montefiore Medical Center, New York, NY, United States, (4)Celebration Orthopedics, Celebration, FL, United States

3:02 pm - 3:07 pm

258 Lateral Pressure and VAS Pain Score Analysis for the Lateral Lumbar Interbody Fusion Procedure

Speaker: [R. Tatsumi](#)

Authors: R. Tatsumi(1)
(1)Northwest Spine Research Foundation, Tualatin, OR, United States

3:08 pm - 3:13 pm

127 Saphenous Nerve SSEP during Transposas Lateral Interbody Fusion: Long Term Follow-up and Review of Case Series

Speaker: [J. Silverstein](#)

Authors: J.W. Silverstein(1,2), L.E. Mermelstein(3,4)
(1)NSLIJ Huntington Hospital, Orthopedics - Intraoperative Neurophysiology Subsection, Huntington, NY, United States, (2)Spine Medical Services, PLLC, Clinical Neurophysiology, Commack, NY, United States, (3)NSLIJ Huntington Hospital, Orthopedics - Spine, Huntington, NY, United States, (4)Long Island Spine Specialists, PC, Orthopedic Spine, Commack, NY, United States

3:14 pm - 3:19 pm

109 Is the Lateral Jack-knife Position Responsible for Cases of Transient Neuropraxia?

Speaker: [D.M. Molinares](#)

Authors: D.M. Molinares(1), T.T. Davis(1), D.A. Fung(1)
(1)The Center for Spine and Joint Restoration, Santa Monica, CA, United States

3:20 pm - 3:30 pm

Discussion

3:30 pm - 5:00 pm - General Session: Biologics

Moderator(s): Donna Ohnmeiss, DrMed

3:30 pm - 3:35 pm

406 Epidemiological Trends in the Utilization of Bone Morphogenetic Protein in Spinal Fusions from 2002-2011

Speaker: [K. Singh](#)

Authors: S.V. Nandyala(1), A.J. Marquez-Lara(1), S.J. Fineberg(1), M. Noureldin(1), K. Singh(1)
(1)Rush University Medical Center, Orthopaedic Surgery, Chicago, IL, United States

3:36 pm - 3:41 pm

528 Prospective Study of Biologic Disc Repair with NuQu Percutaneous Allogeneic Chondrocytes with Two-year Follow-up

Speaker: [D. Coric](#)

Authors: D. Coric(1,2), K. Pettine(3), M.O. Boltes(1)
(1)Carolina Neurosurgery and Spine Associates, Charlotte, NC, United States, (2)Carolinas Medical Center, Department of Neurosurgery, Charlotte, NC, United States, (3)Rocky Mountain Associates in Orthopedic Medicine P.C., Loveland, CO, United States

- 3:42 pm - 3:53 pm **303 A Prospective, Randomized, Controlled Trial of Silicate Substituted Calcium Phosphate versus rhBMP-2 in a Minimally Invasive Transforaminal Lumbar Interbody Fusion**
Speaker: [K. Singh](#)
Authors: S.V. Nandyala(1), A.J. Marquez-Lara(1), M. Noureldin(1), K. Singh(1)
(1)Rush University Medical Center, Orthopaedic Surgery, Chicago, IL, United States
- 3:54 pm - 3:59 pm **112 Inflammatory Response after Spinal Cord Injury in Rats Is Modified by Enbrel**
Speaker: [A. Rasouli](#)
Authors: A. Rasouli(1), Z. Buser(2), L.W. Zhao(2), Y. Safai(2), L.E.A. Kanim(3), M.L. Grode(4), R.B. Delamarter(4)
(1)Cedars-Sinai, Spine Center, Department of Surgery, Los Angeles, CA, United States, (2)Cedars-Sinai, Spine Tissue Engineering, Department of Surgery, Los Angeles, CA, United States, (3)Cedars-Sinai, Spine Tissue Engineering, Los Angeles, CA, United States, (4)Cedars-Sinai, Spine Center, Los Angeles, CA, United States
- 4:00 pm - 4:05 pm **309 Insulin-mimetic Local Therapeutic Adjuncts for Enhancing Spinal Fusion in a Rat Model**
Speaker: [M. Vives](#)
Authors: M.J. Vives(1), J.D. Koerner(1), S.B. Chaudhary(1), L. Uko(1), W. Munoz(1), S.S. Lin(1)
(1)Rutgers-New Jersey Medical School, Orthopaedics, Newark, NJ, United States
- 4:06 pm - 4:16 pm **Discussion**
- 4:17 pm - 4:22 pm **557 A Retrospective Analysis of Platelet Rich Fibrin Matrix Use in Posterolateral Spine Arthrodesis**
Speaker: [A. Breceovich](#)
Authors: A.T. Breceovich(1), P. Kiely(1), C. Abjornson(1), F.P. Cammisa, Jr.(1)
(1)Hospital for Special Surgery, Integrated Spine Research Program, New York, NY, United States
- 4:23 pm - 4:28 pm **464 A Comparison of Radiographic and Clinical Outcomes of Extreme Lateral Interbody Fusion Performed with either Allograft Cellular Bone Matrix or rhBMP-2 Graft Material**
Speaker: [A. Tohmeh](#)
Authors: A. Tohmeh(1), C. Somers(2), M. Tohmeh(2), D. Khorsand(2)
(1)NWOS, Spokane, WA, United States, (2)Northwest Orthopaedic Specialists, Spokane, WA, United States
- 4:29 pm - 4:34 pm **325 Antifibrinolytics Reduce Blood Loss in Adult Spinal Deformity Surgery: A Prospective, Randomized, Controlled Trial**
Speaker: [T. Cheriyan](#)
Authors: A. Peters(1), K. Verma(1), K. Slobodyanyuk(1), T. Cheriyan(1), F.J. Schwab(1), B.S. Lonner(1), T.J. Errico(1)
(1)New York University School of Medicine, New York, NY, United States
- 4:35 pm - 4:40 pm **195 Adjunctive Use of Teriparatide in Spinal Fusion and Fractures**
Speaker: [P. Pazmino](#)
Authors: P.R. Pazmino(1), E. Barraza(2)
(1)SpineCal, Orthopaedic Spine Surgery, Santa Monica, CA, United States, (2)SpineCal, Santa Monica, CA, United States
- 4:41 pm - 4:46 pm **473 Complication Rates in Transforaminal Lumbar Interbody Fusion Using Low-dose Recombinant Bone Morphogenetic Protein-2 (rhBMP-2)**
Speaker: [G. Liao](#)
Authors: G. Liao(1), J. Ruiz(1), H.K. Wong(1)
(1)University Spine Centre, University Orthopaedics, Hand and Reconstructive Microsurgery Cluster, National University Hospital System, Singapore, Singapore, Singapore
- 4:47 pm - 5:00 pm **Discussion**

5:00 pm - 5:05 pm - Closing of ISASS14

3:30 pm - 6:00 pm - Cadaver Lab Lecture (Lab on Saturday)

Saturday, May 3, 2014

7:00 am - 2:00 pm - Cadaver Lab