

SAS 10 Scientific Program

8:00 a.m. – 11:00 a.m.



Pre-Course Program: “Around the World Experience with Cervical and Lumbar Total Disc Replacement”

Moderator: Scott L. Blumenthal, MD

Total disc replacement has been in use for more than 20 years. On the continents of Europe, North America, South America, Asia, Africa, and Australia there are surgeons with high levels of experience with these devices and literature reporting good results, yet disc replacement has not gained universal acceptance as a treatment for painful disc degeneration. There are also reports expressing concern about wear debris and other complications.

After the presentations, there will be a question and answer session during which the audience will be encouraged to ask questions to the speakers.

PANEL: 8:00 AM – 10:00 AM

Introduction	Scott Blumenthal, MD
Europe: (Where It All Began)	Michael Mayer, MD, PhD
North America:	Scott Blumenthal, MD
South America:	Luiz Pimenta, MD, PhD
Asia:	C.K. Park, MD, PhD
Africa:	Louis J. Nel, MD
Australia:	Matthew Scott-Young, MD
Patient Community Perspective:	Richard Longland

DISCUSSION PANEL: 10:00 AM – 11:00 AM

- Tai Friesem, MD
- J. J. Abitbol, MD
- Rudolf Bertagnoli, MD
- Richard Guyer, MD

The objectives of this course are as follows:

- Evaluate the favorable and unfavorable findings reported for lumbar total disc replacement
- Identify barriers to general acceptance to the use of this intervention
- Describe variation by continent of the acceptance and use of lumbar disc replacement
- Understand different approaches and thought processes regarding Cervical and Disc Replacement

8:00 a.m. - 9:00 a.m.

Committee Meetings

9:30 a.m. - 9:45 a.m.

BREAK

11:00 a.m. - 12:00 p.m.



MIS I

Moderators: Jim Schwender, MD, Ali Araghi, MD

11:00 a.m. - 11:06 a.m.

Abstract: 420

The Lumbosacral Plexus and the TransPsoas Approach to the Intervertebral Disc Space: A Cadaveric Study. Is There a “Safe Zone”?

T. Davis¹, H. Bae¹, A. Rasouli¹, R. Delamarter¹

¹The Spine Institute, Santa Monica, CA, USA

11:07 a.m. - 11:13 a.m.

Abstract: 86

Radiofrequency (RF) Kyphoplasty in Comparison to (VP) Vertebroplasty - Clinical and Radiological Results - A Three Months Prospective Evaluation

R. Pflugmacher¹, T. Randau¹, K. Kabir¹, D. Wirtz¹

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

11:14 a.m. - 11:20 a.m.

Abstract: 145

Surgical Anatomy of Lumbar Dorsal Ramus and Its Significance in Nondiscogenic Axial Back Pain and Dorsal Endoscopic Rhizotomy

A. Yeung¹, Y. Zheng¹

¹Desert Institute for Spine Care, Phoenix, AZ, USA

11:21 a.m. - 11:30 a.m.

DISCUSSION

11:31 a.m. - 11:37 a.m.

Abstract: 164

A Comparison of 2-level Lumbar Fusions Using Minimally Invasive (XLIF) vs Open (PLIF)

W. Taylor¹, K. Malone², W.B. Rodgers³, E.J. Gerber³

¹UCSD Thornton Hospital, LaJolla, California, USA, ²NN1 Research Foundation, Las Vegas, NV, USA, ³SpineMidwest, Inc., Jefferson City, MO, USA

11:38 a.m. - 11:44 a.m.

Abstract: 193

Comparing of Percutaneous-TLIF, Open-TLIF and PLIF for Treating Two-level Lumbar Disorders

C.H. Kao¹, C.W. Lo²

¹CHI-MEI Foundation Hospital, Department of Surgery, Yung Kang City, Tainan, Taiwan, Republic of China, ²CHI-MEI Foundation Hospital, Department of Orthopedics, Yung Kang City, Tainan, Taiwan, Republic of China

11:45 a.m. - 11:51 a.m.

Abstract: 467

A Comparison of Unilateral and Bilateral Laminotomies for Decompression of L4-5 Spinal Stenosis

S.W. Hong¹, K.Y. Choi², S.H. Lee²

¹Wooridul Spine Hospital, Orthopedic Surgery, Seoul, Korea, Republic of, ²Wooridul Spine Hospital, Neurosurgery, Seoul, Korea, Republic of

Tuesday, April 27, 2010

11:52 a.m. - 12:00 p.m.

DISCUSSION

12:00 p.m. - 1:00 p.m.

***Advocacy Lunch**

**This is non-CME*



1:00 p.m. - 2:15 p.m.

SYMPOSIUM I:

“MIS: Where Does It Fit Into My Practice?”

Moderator: Jim Schwender, MD

Objectives: The symposium will highlight surgical techniques, tips, and pearls of state-of-the-art MIS surgical techniques. The goal is to provide key insights that allow for successful application of MIS technology.

- Anatomy of Minimally Invasive Spine Surgery:
Wolfgang Rauschnig, MD, PhD
- MIS Decompression:
Carl Laurysen, MD
- MIS TLIF for Spondylolisthesis:
Kern Singh, MD
- MIS Lateral Approach for Scoliosis:
Joseph Riina, MD
- Advanced Techniques for Common Painful Conditions of the Lumbar Spine
Anthony Yeung, MD
- MIS Complications and Avoidance:
Isador Lieberman MD MBA FRCS(C)
Q and A
- MIS Case Presentations/Discussion:
Moderator: Neel Anand, MD

Panel: Kevin Foley, MD; Choll Kim, MD, PhD, William Taylor, MD

2:15 p.m. - 2:45 p.m.

***SAS Business Meeting**

**This is non-CME*

2:45 p.m. - 4:00 p.m.

MIS II

Moderators: Choll Kim, MD, PhD; Larry Khoo, MD



2:45 p.m. - 2:51 p.m.

Abstract: 45

Minimally Invasive TLIF with Pedicle Screws for the Treatment of Degenerative Lumbar Spinal Disorders

T. Julien¹, J. Manon¹, C. Sedney¹, J. Mills¹, J. Orphanos¹

¹West Virginia University, Neurosurgery, Morgantown, WV, USA

2:52 p.m. - 2:58 p.m.

Abstract: 337

AxialLIF(r) Complications in 285 Consecutive Cases

W.D. Smith¹, K. Malone¹, W.B. Rodgers², J. Patterson²

¹Nevada Neurosciences Institute Research Foundation, Research, Las Vegas, NV, USA, ²Spine Midwest Research, Jefferson City, OK, USA

2:59 p.m. - 3:05 p.m.

Abstract: 473

Mini-open Lateral Transposoatic Lumbar Discectomy and Interbody Fusion: Technique and Results

M.P. Lambat¹, G.A. Fantini², F.P. Girardi¹, A.A. Sama¹, F.P. Cammisa, Jr¹
¹Hospital for Special Surgery/Weill Medical College of Cornell University, Orthopaedic Surgery, New York, NY, USA, ²Hospital for Special Surgery/Weill Medical College of Cornell University, Orthopaedic Surgery/Vascular, New York, NY, USA

3:06 p.m. - 3:12 p.m.

Abstract: 457

Long-term Prospective Multi-center Clinical Cohort Evaluation of the AxiaLIF® Procedure

T. Raley^{1,2,3}, P.C. Gertzen⁴, W.D. Tobler⁵, H.E. Aryan⁶, C.P. Ames⁷, W. D. Bradley⁸

¹Virginia Hospital Center, Orthopaedics, Arlington, VA, USA, ²Georgetown University, Washington, DC, USA, ³INOVA Hospital System, Alexandria, VA, USA, ⁴University of Pittsburgh Medical Center, Pittsburgh, PA, USA, ⁵Mayfield Clinic, Cincinnati, OH, USA, ⁶University of California San Diego, San Diego, CA, USA, ⁷University of California San Diego, San Francisco, CA, USA, ⁸Texas Back Institute, Dallas, TX, USA

3:13 p.m. - 3:19 p.m.

DISCUSSION

3:20 p.m. - 3:26 p.m.

Abstract: 7

Minimally Invasive Treatment of Thoracolumbar Fractures

T. Julien¹

¹West Virginia University, Neurosurgery, Morgantown, WV, USA

3:27 p.m. - 3:33 p.m.

Abstract: 188

Effectiveness of Vertebral Augmented and Screw Reinforced Posterior Short Segment Fixation for Thoracolumbar Burst Fractures

H.S. Kim¹, K.H. Jeon¹, W.J. Choi¹, K.T. Kim¹, C.I. Ju², S.W. Kim², S.M. Lee², H. Shin²

¹Hurisarang Hospital, Department of Neurosurgery, Daejeon City, Korea, Republic of, ²Chosun University Hospital, Department of Neurosurgery, Gwangju City, Korea, Republic of

3:34 p.m. - 3:40 p.m.

Abstract: 413

Mid to Long Term, 1 to 2 Year Clinical and Functional Outcomes of Minimally Invasive Surgery for Scoliosis

N. Anand¹, R. Rosemann¹, B. Khalsa², E. Baron¹

¹Cedars Sinai Medical Center, Spine Center, Los Angeles, CA, USA,

²University of California, School of Medicine, Los Angeles, CA, USA

3:41 p.m. - 3:47 p.m.

Abstract: 329

Deformity in Adults: Outcomes of Minimally-invasive Surgical Treatment (XLIF) out to 42 Months Post-op. An South American Case Series

H. Nicola¹, M. Dasilva², L. Pimenta³

¹Hospital San Juan de Dios, Spinal Surgery, Caracas, DC, Venezuela,

²Clinica Sanatrix, Caracas, DC, Venezuela, ³Hospital Santa Rita, Spine Surgery, Sao Paulo, SP, Brazil

3:48 p.m. - 4:00 p.m.

DISCUSSION

4:00 p.m. - 5:00 p.m.

ORAL POSTER PRESENTATIONS

Rooms 206 - 210

Concurrent sessions on:

Posterior Dynamic Stabilization and Facet Replacement, Nucleus Replacement and Anulus Repair, Cervical TDR, Lumbar TDR, Complications and MIS, Fusion and Miscellaneous

MODERATOR: J.J. Abitbol, MD

SESSION I: Room 206

POSTERIOR DYNAMIC STABILIZATION AND FACET REPLACEMENT

4:00 p.m. - 4:03 p.m.; Discussion: 4:03 p.m. - 4:06 p.m.

Abstract: 127

Minimum Two-year Follow-up of Cases with Recurrent Disc Herniation Treated with Microdecompression and Posterior Dynamic Transpedicular Stabilization

T. Kaner¹, M. Sasani², T. Oktenoglu², A.F. Ozer²

¹Pendik State Hospital, Istanbul, Turkey, ²American Hospital, Istanbul, Turkey

4:06 p.m. - 4:09 p.m.; Discussion: 4:09 p.m. - 4:12 p.m.

Abstract: 180

Stratification by Indication Analysis of the Dynesys® Dynamic Stabilization System IDE Study 24-month Results

J.H. Maxwell¹, W. Welch², R. Davis³, A. Menzie⁴

¹Scottsdale Spine Care, Scottsdale, AZ, USA, ²University of Pennsylvania, Philadelphia, PA, USA, ³Greater Baltimore Medical Center, Baltimore, MD, USA, ⁴Zimmer Spine, Minneapolis, MN, USA

4:12 p.m. - 4:15 p.m.; Discussion: 4:15 p.m. - 4:18 p.m.

Abstract: 265

The Role of Facet Contact in Reducing Intervertebral Shear During Simulated Standing

S.A. Rundell^{1,2}, S.M. Kurtz^{2,4}, J. Isaza³, S. Guillory³, J. Day⁴

¹Exponent, Inc, Detroit, MI, USA, ²Drexel University, Philadelphia, PA, USA, ³Our Lady of the Lake Hospital, Baton Rouge, LA, USA, ⁴Exponent, Inc, Philadelphia, PA, USA

4:18 p.m. - 4:21 p.m.; Discussion: 4:21 p.m. - 4:24 p.m.

Abstract: 415

Treatment of Lumbar Spinal Stenosis with a Total Posterior Arthroplasty Prosthesis versus Posterior Lumbar Fusion: A Prospective Report on 145 Patients

L. Pimenta¹, R. Hes², A. Hamzaoglu³, P. McAfee⁴, R. Banco⁴, Y. Anekstein⁵, A. Cappuccino⁶, D. Coric⁷, C. Comey⁸, S. Robbins⁹, F. Geisler¹⁰, P. Slosar¹¹, A. Schwartz¹², G. Girasole¹³, P. Ullrich¹⁴, J. Yue¹⁵, J. Regan¹⁶, L. Khoo¹⁷, C. Laurysen¹⁸, J. Miles¹⁹, P. Asdourian²⁰, K. Gill²¹, J. Small²²

¹Instituto de Patologia da Coluna, Sao Paulo, Brazil, ²Middleheim Hospital, Antwerp, Belgium, ³Florence Nightingale Hospital, Orthopedics, Istanbul, Turkey, ⁴The Boston Spine Group, Newton, MA, USA, ⁵Tel-Aviv University, Tel-Aviv, Israel, ⁶Buffalo Spine Surgery, Lockport, NY, USA, ⁷Carolina Neurosurgery and Spine Associates, Charlotte, NC, USA, ⁸New England Neuro Associates, Springfield, MA, USA, ⁹Milwaukee Spinal Specialists, Milwaukee, WI, USA, ¹⁰Illinois Neuro-Spine Center, Aurora, IL, USA, ¹¹SpineCare Medical Group, Daly City, CA, USA, ¹²Orthopedic Spine Care of Long Island, Melville, NY, USA, ¹³Orthopedic and Sports Medicine Center, Trumbull, CT, USA, ¹⁴NeuroSpine Center of Wisconsin, Appleton, WI, USA, ¹⁵Yale University, New Haven, CT, USA, ¹⁶Spine Group Beverly Hills, Beverly Hills, CA, USA, ¹⁷LA Spine Clinic, Los Angeles, CA, USA, ¹⁸Tower Orthopedic and Neurosurgical Spine Institute, Beverly Hills, CA, USA, ¹⁹Columbia Orthopaedic Group, Columbia, MO, USA, ²⁰Greater Cheseapeake Orthopedic Associates, Baltimore, MD, USA, ²¹Southwestern Medical Center, Dallas, TX, USA, ²²The Center for Spinal Disorders, Temple Terrace, FL, USA

NUCLEUS REPLACEMENT AND ANULUS REPAIR

4:24 p.m. - 4:27 p.m.; Discussion: 4:27 p.m. - 4:30 p.m.

Abstract: 285

The Effect of Anular Repair on Sciatica Patients Receiving a Micro-discectomy Procedure

A. Araghi¹, C.E. Sugden²

¹Texas Back Institute, Phoenix, AZ, USA, ²Anulex Technologies Inc., Minnetonka, MN, USA

4:30 p.m. - 4:33 p.m.; Discussion: 4:33 p.m. - 4:36 p.m.

Abstract: 208

Prospective, Randomized Controlled Study of Repairing the Anulus Fibrosus after Lumbar Discectomy: A Single Surgeon's Experience

A. Bailey¹, J. Messer²

¹Heartland Spine and Specialty Hospital, Overland Park, KS, USA, ²Anulex Technologies Inc., Minnetonka, MN, USA

4:36 p.m. - 4:39 p.m.; Discussion: 4:39 p.m. - 4:42 p.m.

Abstract: 197

Reoperation Rates after Microdiscectomy with and without Anular Repair

L. Guyot¹, S.L. Griffith²

¹Genesys Regional Medical Center, Grand Blanc, MI, USA, ²Anulex Technologies Inc., Minnetonka, MN, USA

4:42 p.m. - 4:45 p.m.; Discussion: 4:45 p.m. - 4:48 p.m.

Abstract: 483

Two Year Follow-up Results of NUBAC, a Peek on Peek Nucleus Replacement Device: A Prospective Worldwide Multi-center Clinical Study

H. Yuan¹, D. Coric², M. Songer³, L. Pimenta⁴, A. Reyes-Sanchez⁵, D. Werner⁶, M. Balsano⁷, U. Agrillo⁸, A. Bucciero⁹

¹Syracuse Upstate Medical University, Syracuse, NY, USA, ²Carolina Neurosurgery and Spine Associates, Charlotte, NC, USA, ³Orthopaedic Surgery Associates of Marquette, Marquette, MI, USA, ⁴Clinica Mattos Pimenta, Sao Paulo, Brazil, ⁵Division de Cirurgia Especial Instituto Ortopedia, Mexico City, Mexico, ⁶Arcade Clinic, Niederschmalkaden, Germany, ⁷Ospedale di Thiene, Thiene, Italy, ⁸Ospedale Sandro Pertini, Rome, Italy, ⁹Clinica Pineta Grande, Casturno, Italy

4:48 p.m. - 4:51 p.m.; Discussion: 4:51 p.m. - 4:54 p.m.

Abstract: 411

Disc Herniation Induces 55% Increase in Load of Key Stabilizing Muscle – Impact on Herniation Treatment Devices?

B. Robie¹, S. Dendorfer², J. Rasmussen³, S. Tørholm²

¹ARO Medical, LLC, Glen Rock, NJ, USA, ²AnyBody Technology, Aalborg, Denmark, ³Aalborg University, Department of Mechanical Engineering, Aalborg, Denmark

4:00 p.m. - 5:00 p.m.

ORAL POSTER PRESENTATIONS

MODERATOR: Carl Laurysen, MD

SESSION II: Room 207

CERVICAL TDR

4:00 p.m. - 4:03 p.m.; Discussion: 4:03 p.m. - 4:06 p.m.

Abstract: 375

Improved Assessment of MRI Artifact Following Cervical Total Disc Arthroplasty

A.H. Fayyazi¹, D. Svach², S. Hanson², J. Chen³, J. Taormina³, N.R. Ordway³

¹VSAS Orthopedics, Allentown, PA, USA, ²Synthes Spine, West Chester, PA, USA, ³SUNY Upstate Medical University, Orthopedic Surgery, Syracuse, NY, USA

4:06 p.m. - 4:09 p.m.; Discussion: 4:09 p.m. - 4:12 p.m.

Abstract: 107

Prospective, Controlled Results of Patients Treated with Expanded Indications for ProDisc®-C

M.E. Janssen¹, R. Delamarter²

¹Center for Spinal Disorders, Thornton, CO, USA, ²The Spine Institute at St John's Health Center, Santa Monica, CA, USA

4:12 p.m. - 4:15 p.m.; Discussion: 4:15 p.m. - 4:18 p.m.

Abstract: 37

The Clinic Result of Bryan Artificial Disc Single Level Replacement for the Cervical Disc Degenerative Diseases: Two-year Follow-up

R. Shi¹, L. Hao¹, R. Shi¹, T. Hu¹, X. Zhao¹, X. Liu¹

¹West China Hospital, Sichuan University, Department of Orthopedic, Chengdu, China

4:18 p.m. - 4:21 p.m.; Discussion: 4:21 p.m. - 4:24 p.m.

Abstract: 352

SECURE®-C Cervical Artificial Disc IDE: Two Year Clinical Outcomes

J. McConnell¹, J. Marzluff², J. Highsmith², C.R. Tomaras³, T.J. Morrison³, I. Volcan⁴, A. Goodrich⁴, P. Asdourian⁵

¹Lehigh Valley Medical Center, Allentown, PA, USA, ²Trident Medical Center, Charleston, SC, USA, ³Northside Hospital, Atlanta, GA, USA, ⁴Doctor's Hospital, Augusta, GA, USA, ⁵Union Memorial Hospital, Baltimore, MD, USA

4:24 p.m. - 4:27 p.m.; Discussion: 4:27 p.m. - 4:30 p.m.

Abstract: 470

In vivo versus in vitro Normal Cervical Sagittal Plane Biomechanics

N.R. Crawford¹, N. Wharton², P.M. Reyes¹, J.A. Hipp²

¹Barrow Neurological Institute, Spinal Biomechanics, Phoenix, AZ, USA, ²Medical Metrics, Inc, Houston, TX, USA

4:30 p.m. - 4:33 p.m.; Discussion: 4:33 p.m. - 4:36 p.m.

Abstract: 495

In-vivo Kinematic Comparison of Prodisc-C, Prestige LP and Bryan Cervical Disc

N. Duggal¹, I. Kowalczyk², D. Rabin²

¹University of Western Ontario, Clinical Neurological Sciences, London, Canada, ²University of Western Ontario, London, Canada

4:36 p.m. - 4:39 p.m.; Discussion: 4:39 p.m. - 4:42 p.m.

Abstract: 159

Biomechanical Comparison of Multi-level Cervical Disc Arthroplasty versus Fusion: ProDisc-C versus Prestige-LP

D.J. DiAngelo¹, L.J. Gilmour¹, J.S. Schwab¹, K.T. Foley², J.W. German², B.P. Kelly¹

¹The University of Tennessee Health Science Center, Department of Biomedical Engineering and Imaging, Memphis, TN, USA, ²The University of Tennessee Health Science Center, Department of Neurosurgery, Memphis, TN, USA

4:42 p.m. - 4:45 p.m.; Discussion: 4:45 p.m. - 4:48 p.m.

Abstract: 267

Comparative Analysis of Radiographic, Clinical, and Surgical Outcome in Cervical Arthroplasty in Terms of Numbers of Involved Level

C.W. Lee¹, K.J. Yoon¹, S.S. Ha¹, J.K. Kang¹

¹St. Peter's Hospital, Neurosurgery, Seoul, Korea, Republic of

MODERATORS: Robert Havey, BS;

William Sears, MD

SESSION III: Room 208

LUMBAR TDR

4:00 p.m. - 4:03 p.m.; Discussion: 4:03 p.m. - 4:06 p.m.

Abstract: 272

Disc Height Distraction Increases Range of Motion and Impingement Risk in Fixed and Mobile Bearing Total Disc Replacements

S.A. Rundell^{1,2}, R. Siskey³, J. Isaza⁴, S.M. Kurtz^{2,5}

¹Exponent, Inc, Detroit, MI, USA, ²Drexel University, Philadelphia, PA, USA, ³Exponent, Inc, Philadelphia, PA, USA, ⁴Our Lady of the Lake Hospital, Baton Rouge, LA, USA, ⁵Exponent, Inc., Philadelphia, PA, USA

4:06 p.m. - 4:09 p.m.; Discussion: 4:09 p.m. - 4:12 p.m.

Abstract: 191

Influence of the Testing Frequency on the Wear Rates of the ProDisc-L Lumbar Disc Replacement

M. Bushelow¹, A. Kettler², H.J. Wilke³

¹Synthes Spine, West Chester, PA, USA, ²SpineServ GmbH & Co. KG, Ulm, Germany, ³Institute for Orthopaedic Research and Biomechanics, Ulm, Germany

4:12 p.m. - 4:15 p.m.; Discussion: 4:15 p.m. - 4:18 p.m.

Abstract: 239

Partial Annulus Fibrosus Preservation Facilitates Restoration of Biomechanics in Lumbar Spinal Segments Treated with Artificial Disc Replacement

U.M. Ayturk¹, C.M. Puttlitz¹, V. Patel²,

¹Colorado State University, Department of Mechanical Engineering, Fort Collins, CO, USA, ²University of Colorado, Orthopaedic Spine Surgery, Denver, CO, USA

4:18 p.m. - 4:21 p.m.; Discussion: 4:21 p.m. - 4:24 p.m.

Abstract: 70

Biomechanical Evaluation of a Single Level Selectively Constrained Anterior PEEK Lumbar Disc and Its Effect on Adjacent Level Kinematics: An in-vitro Cadaveric Study

T.K. Daftari¹, S.R. Chinthakunta², M. Gudipally², M. Hussain², S. Khalil²

¹WellStar Kennestone Hospital, Orthopaedics, Atlanta, GA, USA, ²Globus Medical Inc, Research, Audubon, PA, USA

4:24 p.m. - 4:27 p.m.; Discussion: 4:27 p.m. - 4:30 p.m.

Abstract: 453

Effects of Testing Parameter Perturbations in the ISO Standard for Wear of the ProDisc-L Total Disc Replacement

C.M. Goreham-Voss¹, T.D. Brown¹, R.M. Hall², J. Fisher²

¹The University of Iowa, Orthopaedic Surgery and Biomedical Engineering, Iowa City, IA, USA, ²University of Leeds, Institute of Medical and Biological Engineering, Leeds, United Kingdom

4:30 p.m. - 4:33 p.m.; Discussion: 4:33 p.m. - 4:36 p.m.

Abstract: 279

Biomechanics of Disc Arthroplasty. What Can Be Done to Improve Results - Present and Future Perspectives

L. Pimenta^{1,2}, L. Marchi¹, E. Coutinho¹, L. Oliveira^{1,3}

¹Instituto de Patologia da Coluna, São Paulo, Brazil, ²University of California San Diego, Neurosurgery, San Diego, CA, USA, ³Universidade Federal de São Paulo, Radiology, São Paulo, Brazil

4:36 p.m. - 4:39 p.m.; Discussion: 4:39 p.m. - 4:42 p.m.

Abstract: 51

Direct Comparison of Two Lumbar Total Disc Replacement Devices: Results from a Prospective, Randomized, Multicenter FDA-regulated Trial

A.Cappuccino¹, R.D. Guyer², K. Pettine³, R.Q. Knight⁴, T.A. Dimmig⁵, D. Coric⁶, P.C. McAfee⁷, C.R. Gordon⁸, R.A. Buckley⁹, P. Nunley¹⁰, F.H. Geisler¹¹, T.A. Peppers¹², J.R. Rappaport¹³, C. Laurysen¹⁴, G. Dix¹⁵, W.K. Cheng¹⁶, S. Hu¹⁷, Y.P. Lee¹⁸, F.D. Bitan¹⁹, R. Bains²⁰

¹Buffalo Spine Surgery, Lockport, NY, USA, ²Texas Back Institute, Plano, TX, USA, ³Rocky Mountain Associates in Orthopedic Medicine, Loveland, CO, USA, ⁴Orthopedics International Spine, Seattle, WA, USA, ⁵Triangle Orthopedics Associates, Durham, NC, USA, ⁶Carolina Neurosurgery and Spine Associates, ⁷Orthopaedic Associates, P.A., Towson, MD, USA, ⁸Gordon Spine Associates, Tyler, TX, USA, ⁹Slocum Dickson Medical Group, New Hartford, NY, USA, ¹⁰Spine Institute of Louisiana, Shreveport, LA, USA, ¹¹Illinois Neuro-Spine Center, Aurora, IL, USA, ¹²CORE Orthopaedic Medical Center, Encinitas, CA, USA, ¹³Sierra Regional Spine Institute, Reno, NV, USA, ¹⁴Tower Orthopedics and Sports Medicine, Beverly Hills, CA, USA, ¹⁵Maryland Brain and Spine Center, Annapolis, MD, USA, ¹⁶Loma Linda University, Loma Linda, CA, USA, ¹⁷University of California San Francisco, San Francisco, CA, USA, ¹⁸University of California San Diego, San Diego, CA, USA, ¹⁹Manhattan Orthopaedics, P.C., New York, NY, USA, ²⁰Kaiser Oakland Spine Surgery, Oakland, CA, USA

4:42 p.m. - 4:45 p.m.; Discussion: 4:45 p.m. - 4:48 p.m.

Abstract: 124

Results from the Prospective, Randomized, Multicenter IDE Study of 2-level ProDisc®-L: Randomized Patients versus Continued Access Patients at 2 Years

M.E. Janssen¹, J.E. Zigler², R. Delamarter³, M.A. Krop³, R.A. Balderston⁴, J.M. Spivak⁵, J.A. Goldstein⁵, R.J. Linovitz⁶, J.F. Zucherman⁷, J.J. Yue⁸, T.T. Haider⁹, S.H. Kitchel¹⁰, F.P. Cammisa¹¹, G.O. Danielson¹², D. Geiger¹³, R. Watkins¹⁴, H. Yuan¹⁵, J.E. Sherman¹⁶, H.N. Herkowitz¹⁷

¹Center for Spinal Disorders, Thornton, CO, USA, ²Texas Back Institute, Plano, TX, USA, ³The Spine Institute at St John's Health Center, Santa Monica, CA, USA, ⁴Pennsylvania Hospital, Philadelphia, PA, USA, ⁵NYU Hospital for Joint Diseases, New York, NY, USA, ⁶CORE Orthopaedic Medical Center, Encinitas, CA, USA, ⁷St Mary's Spine Center, San Francisco, CA, USA, ⁸Yale University, New Haven, CT, USA, ⁹Haider Spine Center Medical Clinic, Inc, Riverside, CA, USA, ¹⁰Orthopedic Spine Associates, LLC, Eugene, OR, USA, ¹¹Hospital for Special Surgery, New York, NY, USA, ¹²Texas Spine and Joint Hospital, Tyler, TX, USA, ¹³Michigan Brain & Spine Institute PC, Ypsilanti, MI, USA, ¹⁴Watkins Spine Group, Marina Del Ray, CA, USA, ¹⁵SUNY Syracuse, Syracuse, NY, USA, ¹⁶Twin Cities Orthopedics, Edina, MN, USA, ¹⁷William Beaumont Hospital, Royal Oak, MI, USA

4:48 p.m. - 4:51 p.m.; Discussion: 4:51 p.m. - 4:54 p.m.

Abstract: 231

A Prospective Clinical Comparison of 3 Biomechanical Types of Lumbar Disc Replacements: A Semi-constrained Device, a Controlled Translation Device, and an Unconstrained Device Minimum 2 Year Follow-up

J.J. Yue¹, R. Ramachandran¹, R. Garcia²

¹Yale University School of Medicine, Orthopaedic Surgery, New Haven, CT, USA, ²Aventura Hospital, Orthopaedic Surgery, Aventura, FL USA

4:54 p.m. - 4:57 p.m.; Discussion: 4:57 p.m. - 5:00 p.m.

Abstract: 295

Prospective Randomized Study of Interpedicular Motion Pre and Post Lumbar TDR: Comparison of Unconstrained, Semi-constrained, and Constrained TDR Designs

R. Garcia¹, J. Yue², P. Newman³, N. Wharton³, J. Hipp³

¹Orthopedic Care Center, Aventura, FL, USA, ²Yale University School of Medicine, Orthopaedic Surgery, New Haven, CT, USA, ³Medical Metrics, Inc, Houston, TX, USA

5:00 p.m. - 5:03 p.m.; Discussion: 5:03 p.m. - 5:06 p.m.

Abstract: 480

Effect of Total Lumbar Disc Replacement on Segmental and Lumbar Sagittal Balance and Movement

R. Sinigaglia^{1,2}, U. Nena², D.A. Fabris Monterumici²

¹Padua University, Padua, Italy, ²Padua University Hospital, Padua, Italy

MODERATOR: Scott Hodges, DO

SESSION IV: Room 209

COMPLICATIONS AND MIS

4:00 p.m. - 4:03 p.m.; Discussion: 4:03 p.m. - 4:06 p.m.

Abstract: 277

Evaluation of Hip Flexion Strength Following Extreme Lateral Interbody Fusion: Is the Psoas Muscle Seriously Injured?

H. Ghofrani¹, Y.P. Lee¹, G.J. Regev¹, M. Gulian¹, S.R. Garfin¹, C.W. Kim²

¹University of California, Orthopaedic Surgery, San Diego, CA, USA,

²Alvarado Hospital, Orthopaedic Surgery, San Diego, CA, USA

4:06 p.m. - 4:09 p.m.; Discussion: 4:09 p.m. - 4:12 p.m.

Abstract: 123

Complications Associated with Axial Lumbar Interbody Fusion

E.M. Lindley¹, M. Mccullough¹, C. Brown¹, E.L. Burger¹, V.V. Patel¹

¹University of Colorado Denver, Orthopaedics, Aurora, CO, USA

4:12 p.m. - 4:15 p.m.; Discussion: 4:15 p.m. - 4:18 p.m.

Abstract: 233

The Subsidence Rate in XLIF Osteoporotic Patients in Standalone Procedures

L. Pimenta^{1,2}, L. March¹, E. Coutinho^{1,3}, L. Oliveira^{1,3}

¹Instituto de Patologia da Coluna, São Paulo, Brazil, ²University of California San Diego, Neurosurgery, San Diego, USA, ³Universidade

Federal de São Paulo, Radiology, São Paulo, Brazil

4:18 p.m. - 4:21 p.m.; Discussion: 4:21 p.m. - 4:24 p.m.

Abstract: 146

The Surgical Anatomy of Lumbar Sympathetic, Autonomic, and Fural Nerves: Their Significance in Selective Endoscopic Discectomy

A.T. Yeung¹, Y. Zheng¹

¹Desert Institute for Spine Care, Phoenix, AZ, USA

4:24 p.m. - 4:27 p.m.; Discussion: 4:27 p.m. - 4:30 p.m.

Abstract: 377

Diagnosis and Treatment of Nonunion of Osteoporotic Thoracolumbar Vertebral Fractures

H. Yang¹, G. Wang¹

¹The First Affiliated Hospital of Soochow University, Suzhou, China

4:30 p.m. - 4:33 p.m.; Discussion: 4:33 p.m. - 4:36 p.m.

Abstract: 323

Navigation-guided Pedicle Screw Placement: Can This Procedure Substitute the Conventional Use of Fluoroscopy in the Thoracic and Lumbar Spines?

K. S. Ryu¹, K.Y. Lee¹, H.J. Lee¹, C.K. Park¹

¹Seoul St. Mary's Hospital, the Catholic University of Korea, Neurosurgery, Seoul, Korea, Republic of

Moderator: Michael Janssen, DO

SESSION V: Room 210

FUSION AND MISCELLANEOUS

4:00 p.m. - 4:03 p.m.; Discussion: 4:03 p.m. - 4:06 p.m.

Abstract: 108

Quantification of Intradiscal Pressures below Thoracolumbar Spinal Fusion Constructs: Is There Evidence to Support "Saving a Level?"

B. Lonner¹, J. Auerbach², T. Errico², A. Freeman³, D. Goerke³, B. Beaubien³
¹NYU Hospital for Joint Diseases, Orthopaedic Surgery, New York, NY, USA, ²Washington University School of Medicine, St. Louis, MO, USA, ³Excelsior Center for Bone and Joint Research and Education, Minneapolis, MN, USA

4:06 p.m. - 4:09 p.m.; Discussion: 4:09 p.m. - 4:12 p.m.

Abstract: 119

Metanalysis of Class I and II Data on Results of Anterior Cervical Decompression and Fusion

K.A. Pettine¹, L. Eisermann²

¹The Spine Institute, Loveland, CO, USA, ²NuVasive, Inc, San Diego, CA, USA

4:12 p.m. - 4:15 p.m.; Discussion: 4:15 p.m. - 4:18 p.m.

Abstract: 60

Analysis of Change in Scores in Commonly Used Outcome Measures: What Can We Legitimately Assume about the Stability of Individual Patient Scores Based on Group Mean Scores?

D.D. Ohnmeiss¹, R.D. Guyer², S.L. Blumenthal²

¹Texas Back Institute Research Foundation, Plano, TX, USA, ²Texas Back Institute, Plano, TX, USA

4:18 p.m. - 4:21 p.m.; Discussion: 4:21 p.m. - 4:24 p.m.

Abstract: 115

Spine Surgery at an Ambulatory Surgery Center

K.A. Pettine¹

¹The Spine Institute, Loveland, CO, USA

4:24 p.m. - 4:27 p.m.; Discussion: 4:27 p.m. - 4:30 p.m.

Abstract: 235

Marked Improvement in Patients Treated with Vertebroplasty after Painful Osteoporotic Compression Fractures

H. Bae¹, L.E.A. Kanim¹, N. Gupta¹, M. Kropf¹, R. Delamarter¹

¹Spine Research Foundation, Santa Monica, CA, USA

4:30 p.m. - 4:33 p.m.; Discussion: 4:33 p.m. - 4:36 p.m.

Abstract: 169

The Feasibility of Radiation-free Diagnostic Monitoring in Adolescent Idiopathic Scoliosis Using a Novel, Upright Positional MRI Protocol

B. Lonner¹, J. Auerbach², L. Dean², Y. Goldstein²

¹NYU Hospital for Joint Diseases, Orthopaedic Surgery, New York, NY, USA, ²Washington University School of Medicine, St. Louis, MO, USA

4:36 p.m. - 4:39 p.m.; Discussion: 4:39 p.m. - 4:42 p.m.

Abstract: 405

Histological Features of the Degenerating Intervertebral Disc in the Goat Disc-injury Model

H. An¹, Y. Zhang¹, B. Lenart¹, S. Drapeau², D. Markova³, D.G. Anderson³

¹Rush University Medical Center, Chicago, IL, USA, ²Medtronic Spinal Biologics, Memphis, TN, USA, ³Thomas Jefferson University, Philadelphia, PA, USA

4:42 p.m. - 4:45 p.m.; Discussion: 4:45 p.m. - 4:48 p.m.

Abstract: 263

Radiation to Surgeon's Hands Wearing and Not Wearing Lead Gloves

A. Yeung¹

¹Desert Institute for Spine Care, Phoenix, AZ, USA

4:48 p.m. - 4:51 p.m.; Discussion: 4:51 p.m. - 4:54 p.m.

Abstract: 433

MRI-based Thickness Measurements of Lumbar Facet Joint Subchondral Bone

H. An¹, C. Y. Duan^{1,2}, N. Inoue¹, A.A. Orías¹, G.B. Andersson¹, J. Hu², H. Lu²

¹Rush University Medical Center, Orthopaedic Surgery, Chicago, IL, USA, ²Xiangya Hospital, Central South University, Orthopaedic Surgery, Changsha, China

5:00 p.m. - 7:00 p.m.

OPENING RECEPTION/TRANSFER OF PRESIDENCY

8:00 a.m. - 9:15 a.m.



LUMBAR TDR

Moderators: Thomas Errico, MD; Matthew Scott-Young, MD

8:00 a.m. - 8:06 a.m.

Abstract: 195

ProDisc®-L Total Disc Replacement over Time: Five-to-eight Year Follow-up

R. Bertagnoli¹

¹Pro-Spine, Straubing, Germany

8:07 a.m. - 8:13 a.m.

Abstract: 132

Lumbar Disc Arthroplasty versus Anterior Lumbar Interbody Fusion: Five-year Outcomes for Patients in the Maverick® Disc IDE Study

M.F. Gornet¹, J. Kenneth Burkus², R.F. Dryer³, J.H. Pelozo⁴

¹The Orthopedic Center of St. Louis, Spine Research Center, St. Louis, MO, USA, ²The Hughston Clinic, Columbus, OH, USA, ³Central Texas Spine Institute, Austin, TX, USA, ⁴Center for Spine Care, Dallas, TX, USA

8:14 a.m. - 8:20 a.m.

Abstract: 90

5-year Results of the Prospective, Randomized, Multicenter Food and Drug Administration Investigational Device Exemption Study of the ProDisc®-L Total Disc Replacement versus Circumferential Fusion for the Treatment of 2-level Degenerative Disc Disease

J.E. Zigler¹, R. Delamarter², R.A. Balderston³, J.M. Spivak⁴, R.J. Linovitz⁵, J.F. Zucherman⁶, J.J. Yue⁷, T.T. Haider⁸, S.H. Kitchel⁹, F.P. Cammisia¹⁰, G.O. Danielson, III¹¹, D. Geiger¹², R. Watkins¹³, H. Yuan¹⁴, J.E. Sherman¹⁵, H.N. Herkowitz¹⁶, M.A. Kropf¹, J.A. Goldstein⁴

¹Texas Back Institute, Plano, TX, USA, ²The Spine Institute at St. John's Health Center, Santa Monica, CA, USA, ³Pennsylvania Hospital, Philadelphia, PA, USA, ⁴NYU/Hospital for Joint Diseases, New York, NY, USA, ⁵CORE Orthopaedic Medical Center, Encinitas, CA, USA, ⁶St Mary's Spine Center, San Francisco, CA, USA, ⁷Yale University, New Haven, CT, USA, ⁸Haider Spine Center Medical Clinic, Inc, Riverside, CA, USA, ⁹Orthopedic Spine Associates, LLC, Eugene, OR, USA, ¹⁰Hospital for Special Surgery, New York, NY, USA, ¹¹Texas Spine and Joint Hospital, Tyler, TX, USA, ¹²Michigan Brain & Spine Institute PC, Ypsilanti, MI, USA, ¹³Watkins Spine Group, Marina Del Ray, CA, USA, ¹⁴SUNY Syracuse, Syracuse, NY, USA, ¹⁵Twin Cities Orthopedics, Edina, MN, USA, ¹⁶William Beaumont Hospital, Royal Oak, MI, USA

8:21 a.m. - 8:27 a.m.

Abstract: 120

Prospective Evaluation of the Charite™ Lumbar Artificial Disc Replacement with Minimum Three-year Follow up

K.A.Pettine¹

¹The Spine Institute, Loveland, CO, USA

8:28 a.m. - 8:34 a.m.

DISCUSSION

8:35 a.m. - 8:41 a.m.

Abstract: 221

FlexiCore® Disc Replacement vs. Fusion: Work Status and Pain Medication Usage at Three Years Post-surgery

J. Zucherman¹, E. Woodard², C. Theofilos³, R. Sasso⁴

¹St. Mary's Spine Center, San Francisco, CA, USA, ²The New England Baptist Bone and Joint Institute, Boston, MA, USA, ³Spine Center, Palm Beach Gdns, FL, USA, ⁴Indiana Spine Group, Indianapolis, IN, USA

8:42 a.m. - 8:48 a.m.

Abstract: 69

Results of Comparing X-ray Measurements Pre- and Two-years Postoperatively with DCRA Technique in a RCT between Fusion and TDR

S. Berg¹, H. Tropp², G. Leivseth³

¹Stockholm Spine Center, Stockholm, Sweden, ²Linköpings Hälsouniversitet, Orthopedic Clinic, Linköping, Sweden, ³Norwegian University of Science and Technology, Institute of Clinical Neuroscience, Trondheim, Norway

8:49 a.m. - 8:55 a.m.

Abstract: 114

F.D.A. I.D.E. Prospective Randomized Comparison of Three Lumbar Artificial Disc Replacements (A.D.R.) with Minimum Three-year Follow up

K.A. Pettine¹

¹The Spine Institute, Loveland, CO, USA

8:56 a.m. - 9:02 a.m.

Abstract: 504

Cost-effectiveness of Lumbar Total Disc Replacement versus Lumbar Fusion

A. Tuschel¹, M. Meissl¹, M. Ogon¹

¹Orthopaedic Hospital Speising, Vienna, Spine Unit, Vienna, Austria

9:03 a.m. - 9:15 a.m.

DISCUSSION

9:15 a.m. - 10:30 a.m.



SYMPOSIUM II:

“Cervical Disc Replacement Symposium”

Moderator: Rick Sasso, MD

Goal: Overview of cervical motion preservation techniques. This symposium will discuss appropriate indications and device selection for cervical reconstruction.

- TDR, ACDF: Patient Selection – Decision Making.
Todd Albert, MD
- What are the Differences Between Types of Disc Replacements in Terms of Design and Surgical Techniques?
Jeff Goldstein, MD
- What have the World-wide Studies Shown Us?
Rick Sasso, MD
- Complications Avoidance and Management:
Paul Anderson, MD
- What will the Future Look Like?
Frank Phillips, MD

10:30 a.m. - 11:00 a.m.

BREAK

11:00 a.m.- 12:00 p.m.

CERVICAL/DEFORMITY

Moderators: Rudolf Bertagnoli, MD; Paul Anderson, MD

11:00 a.m. - 11:06 a.m.



Abstract: 129

Axial Neck Pain after Cervical Laminoplasty

C.K. Chough¹, J.Y. Oh¹, C.K. Park¹

¹St. Mary's Hospital, The Catholic University of Korea, College of Medicine, Department of Neurosurgery, Seoul, Korea, Republic of

11:07 a.m. - 11:13 a.m.

Abstract: 299

CerviCore® vs. Fusion: Two Year Clinical Results and Pain Medication Usage at Five IDE Study Sites

R. Garcia¹, N.M. Wright², W.S. Edwards³, C.S Theofilos⁴, L.L.Thibodeau⁵

¹Orthopedic Care Center, Aventura, FL, USA, ²Washington University School of Medicine, St. Louis, MO, USA, ³Pee Dee Spine Center, Florence, SC, USA, ⁴The Spine Center, Palm Beach Gardens, FL, USA, ⁵Neurosurgery Associates, Scarborough, ME, USA

11:14 a.m. - 11:20 a.m.

Abstract: 356

Prospective Study of Cervical Arthroplasty: 98 Patients from Three Separate IDE Studies from a Single Investigational Site with Minimum Two Year Follow-up

D. Coric¹, J. Cassis¹, J.D. Carew², M.O. Boltes¹

¹Carolina Neurosurgery and Spine Associates, Charlotte, NC, USA, ²Carolinas Healthcare System, R Stuart Dickson Institute for Health Studies, Charlotte, NC USA

11:21 a.m. - 11:30 a.m.

DISCUSSION

11:31 a.m. - 11:37 a.m.

Abstract: 175

Prospective, Non-randomized, Multi-center Clinical Evaluation of Extreme Lateral Interbody Fusion (XLIF) in the Treatment of Adult Scoliosis

K. Malone¹, W.B. Rodgers², A.G. Tohmeh³, J.A. Hyde⁴, K. Khajavi⁵

¹NNI Research Foundation, Las Vegas, NV, USA, ²SpineMidwest, Inc., Jefferson City, MO, USA, ³Orthopaedic Specialty Clinic of Spokane, Spokane, WA, USA, ⁴South Florida Spine Institute, Miami Beach, FL, USA, ⁵Georgia Spine & Neurosurgical Institute, Decatur, GA, USA

11:38 a.m. - 11:44 a.m.

Abstract: 67

Does Duration of Symptoms Affect the Outcome of Cervical Disc Replacement (TDA)?

A. Kasis¹, R. Taranu¹, L. Marshman¹, Friesem¹

¹University Hospital of North Tees, Spine Unit, Stockton-on-Tees, United Kingdom

11:45 a.m. - 11:51 a.m.

Abstract: 390

Changes in Coronal and Sagittal Plane Alignment after XLIF Procedure in the Treatment of Degenerative Scoliosis

L. Pimenta^{1,2}, L. Marchi¹, E. Coutinho¹, L. Oliveira^{1,3}

¹Instituto de Patologia da Coluna, São Paulo, Brazil, ²University of California San Diego, CA, Neurosurgery, San Diego, CA, USA, ³Universidade Federal de São Paulo, Radiology, São Paulo, Brazil

11:52 a.m. - 12:00 p.m.

DISCUSSION

12:00 p.m. - 2:00 p.m.
INDUSTRY WORKSHOPS

2:00 p.m. - 3:15 p.m.
SYMPOSIUM III:



“Defining Value in Spine Care”

Moderator: Frank Phillips, MD

- How Do We Define and Measure Value?
Steve Glassman, MD
- Value Assessment of New Spinal Technologies
Frank Phillips, MD
- Comparative Effectiveness: What Does It Mean?
David Wong MD, MSc, FRCS(C)
- Value in Spine Care: The European Experience
Rudolf Bertagnoli, MD
- The Value Case for Cervical TDR and ACDF
Todd Albert, MD

3:15 p.m. - 3:45 p.m.
BREAK

3:45 p.m. - 5:00 p.m.

CERVICAL WORLD CAFÉ (Room 212)
LUMBAR WORLD CAFÉ (Room 209)
MIS WORLD CAFÉ (Room 210)



Faculty:

(MIS) Luiz Pimenta, MD, PhD
(Cervical) James Yue, MD
(Lumbar) Jack Zigler, MD

The challenges of life in the 21st Century require us to find new ways to access the wisdom and intelligence inherent in groups both small and large. The need for collaboration, insight and coordinated action has never been greater. At this year's meeting, SAS is offering a new, innovative program that will be based around Cervical, Lumbar and MIS case studies developed by leaders in the spine industry, called a World Cafe. The world café is an intensive round table discussion program that discusses a series of challenging case studies that will allow participants to confer on treatment options and protocols.

Participants must select either CERVICAL, LUMBAR or MIS cases to review, then after rounds of discussion, the group will gather to share and explore emerging outcomes, insights and learning's.

Learning Objectives:

- Participants will be able to learn from each other by listening together for patterns, insights, and deeper questions relating to their case study.
- By cross-pollinating ideas and sharing thoughts, collective discoveries and outcomes will be developed and that are meaningful to studies outcome.

8:00 a.m. - 8:45 a.m.



SPINAL BIOLOGICS/ANNULAR REPAIR

Moderators: Lisa Ferrera, PhD; Courtney Brown, MD

8:00 a.m. - 8:06 a.m.

Abstract: 248

BIOSTAT BIOLOGX® Intradiscal Fibrin Sealant Used for the Treatment of Chronic Low Back Pain Caused by Lumbar Internal Disc Disruption: Results of a 12 Month, Prospective Multicenter Pilot Study

K. Pauza¹, W. Yin², W. Olan³, J. Doerzbacher⁴

¹Texas Spine and Joint Hospital, Interventional Spine, Tyler, TX, USA, ²Bellingham Spine, Bellingham, WA, USA, ³Potomac, Potomac, MA, USA, ⁴Spinal Restoration, Austin, TX, USA

8:07 a.m. - 8:13 a.m.

Abstract: 409

Cell Therapy with Human Umbilical Cord Blood-derived Mesenchymal Stem Cells for Intervertebral Disc Repair in Cultured Rabbit Disc Explants

H. An¹, Y. Zhang¹, D. Markova², B. Saitta³, V. Markov¹, M. Enomoto-Iwamoto², A. Chee¹, D.G. Anderson²

¹Rush University Medical Center, Chicago, IL, USA, ²Thomas Jefferson University, Philadelphia, PA, USA, ³Corriell Institute, Camden, NJ, USA

8:14 a.m. - 8:20 a.m.

Abstract: 406

Inflammatory Response in Intervertebral Disc Cells is Reduced by Fibrin Sealant

Z. Buser¹, J. Liu¹, D. Coughlin¹, J.C. C Lotz¹, K.J. Thorne²

¹UCSF, Orthopaedic Surgery, San Francisco, CA, USA, ²Spinal Restoration Inc, Austin, TX, USA

8:21 a.m. - 8:27 a.m.

Abstract: 219

Preliminary Observations from a Prospective, Multi-center, Randomized, Controlled Clinical Trial Evaluating Annular Repair after Lumbar Discectomy

R. Guyer¹, S. Blumenthal¹, A. Bailey², G. Amundson², M. Chedid³, J.S. Gerdes⁴, J. Messer⁵, S.L. Griffith⁵, Anulex Annular Repair Clinical Investigators Group

¹Texas Back Institute, Plano, TX, USA, ²Heartland Spine and Specialty Hospital, Overland Park, KS, USA, ³Henry Ford Hospital, Detroit, MI, USA, ⁴St Cloud Hospital, St Cloud, MN, USA, ⁵Anulex Technologies Inc., Minnetonka, MN, USA

8:28 a.m. - 8:34 a.m.

Abstract: 407

Effects of Local Anesthetic and Nonionic Contrast Agents on Bovine Intervertebral Disc Cells Cultured in Alginate

H. An¹, J. Ren¹, Y. Zhang¹, A. Chee¹,

¹Rush University Medical Center, Chicago, IL, USA

8:35 a.m. - 8:45 a.m.

DISCUSSION

8:45 a.m. - 9:15 a.m.

***Dr. Errico's Presidential Address**

**This is non-CME*

9:15 a.m. - 10:45 a.m.

Gov. Michael Leavitt

Dr. Uwe Reinhardt

10:45 a.m. - 11:00 a.m.

BREAK

11:00 a.m. - 12:00 p.m.



CERVICAL TDR

Moderators: Jeff Goldstein, MD; Hansen Yuan, MD

11:00 a.m. - 11:06 a.m.

Abstract: 106

5-year Results of the Prospective, Randomized, Multicenter Food and Drug Administration Investigational Device Exemption ProDisc®-C Clinical Trial

R. Delamarter¹, D. Murrey², B. Darden², M. Janssen³, J.A. Goldstein⁴, J. Zigler⁵, K.B. Tay⁶

¹The Spine Institute at St John's Health Center, Santa Monica, CA, USA, ²OrthoCarolina Spine Center, Charlotte, NC, USA, ³Center for Spinal Disorders, Thornton, CO, USA, ⁴NYU/Hospital for Joint Diseases, New York, NY, USA, ⁵Texas Back Institute, Plano, TX, USA, ⁶University of California San Francisco, San Francisco, CA, USA

11:07 a.m. - 11:13 a.m.

Abstract: 55

A Prospective Randomized Comparison of Cervical Disc Replacement and Anterior Cervical Fusion: Combined Results from Five FDA IDE Trials from a Single Site

J.E. Zigler¹, A.M. Atanasov¹, D.D Ohnmeiss¹, S.L. Blumenthal², R.D. Guyer², M.S. Hisey²

¹Texas Back Institute, Plano, TX, USA, ²Texas Back Institute Research Foundation, Plano, TX, USA

11:14 a.m. - 11:20 a.m.

Abstract: 302

2-level Cervical Disc Arthroplasty: Clinical Results from 6 Centers in a Prospective Randomized IDE Trial

T.H Lanman¹, J.K. Burkus², R. Dryer³, M. Gornet⁴, B. Gunter⁵, I. Canavati⁶

¹Beverly Hills, CA, USA, ²Hughston Clinic, Columbus, OH, USA, ³Central Texas Spine Institute, LLP, Austin, TX, USA, ⁴Orthopedic Center of St. Louis, St. Louis, MO, USA, ⁵Columbia Neurosurgical, Columbia, SC, USA, ⁶Fort Wayne Neurological Center, Fort Wayne, IN, USA

11:21 a.m. - 11:27 a.m.

DISCUSSION

11:28 a.m. - 11:34 a.m.

Abstract: 294

The Effect of Cervical Total Disc Arthroplasty (TDA) Prosthesis Height on the Adjacent Disc Height, Range of Movement of the TDA and Cervical Lordosis

A. Kasis¹, R. Taranu¹, L. Marshman¹, T. Friesem¹

¹University Hospital of NorthTees, Spine Unit, Stockton-on-Tees, United Kingdom

11:35 a.m. - 11:41 a.m.

Abstract: 496

Cervical TDR with up to 3 Years of Follow-up: The Mobi-C® French Study

T. Dufour¹, J. Beaurain², P. Bernard³, J. Huppert⁴, J.P. Steib⁵, J.M. Vital⁶, T. Vila⁷, I. Hovorka⁸, J.M. Fuentes⁹, P. Dam-Hieu¹⁰, J. Stecken¹

¹CHR Orleans, Neurosurgery, Orleans, France, ²CHU Dijon, Neurosurgery, Dijon, France, ³CAD, Orthopaedic Surgery, Pessac, France, ⁴Clinique du Parc, Neurosurgery, Saint Etienne, France, ⁵CHU Strasbourg, Spine Surgery, Strasbourg, France, ⁶CHU Pellegrin Tripode, Bordeaux, France, ⁷LDR Medical, Orthopaedic Surgery, Troyes, France, ⁸CHU Nice, Orthopaedic Surgery, Nice, France, ⁹Clinique du Millenaire, Neurosurgery, Montpellier, France, ¹⁰CHU Brest, Neurosurgery, Brest, France

11:42 a.m. - 11:48 a.m.

Abstract: 322

Comparing of Hybrid Arthroplasty, Fusion Surgery and Total Disc Replacement for the Treating of Two-level Cervical Degenerative Disease

C.-H. Kao¹

¹CHI-MEI Foundation Hospital, Department of Surgery, Yung Kang City, Taiwan, Republic of China

11:49 a.m. - 12:00 p.m.

DISCUSSION

12:00 p.m. - 2:00 p.m.

INDUSTRY WORKSHOPS

2:00 p.m. - 3:15 p.m.

SYMPOSIUM IV

"Avoiding Complications in Complex Spinal Surgery"

Moderator: Gunnar Andersson, MD, PhD

- Biomechanical considerations and limitations of motion preservation
Lisa Ferrara, PhD
- Complications and avoidance with posterior motion preservation devices
Paul McAfee, MD
- Complications and avoidance with TDR
Jean-Charles Le Huec, MD, PhD
- Complications and avoidance in osteoporotic bone
Scott Blumenthal, MD
- Complications and avoidance in MIS surgery
Kern Singh, MD

3:15 p.m. - 3:45 p.m.

BREAK

3:45 p.m. - 5:00 p.m.

INNOVATIVE TECHNOLOGIES

Moderators: Thierry Marnay, MD; Jeff Fischgrund, MD

3:45 p.m. - 3:51 p.m.

Abstract: 458

Two Year Follow-up Results from the US IDE Feasibility of NUBAC, an Articulating PEEK on PEEK Nucleus Replacement Device

D. Coric¹, J. Regan², M.N. Songer^{3,4,5}

¹Charlotte Spine Center, Charlotte, NC, USA, ²Cedars Sinai Institute for Spinal Disorders, Los Angeles, CA, USA, ³Michigan Technological University, Mechanical Engineering, Houghton, MI, USA, ⁴Michigan State College of Human Medicine, Surgery, Lansing, MI, USA, ⁵Orthopaedic Surgery Associates of Marquette Orthopedics, Marquette, MI, USA

3:52 p.m. - 3:58 p.m.

Abstract: 250

Posterior Disc Arthroplasty: Clinical Results from a Prospective Study

T. Zorzi¹, A. Bucciero¹, G.A. Piscopo¹, G. Nicosia¹, A. Zaccariello¹

¹Pineta Grande Hospital, Department of Neurosurgery, Castel Volturno, Italy

3:59 p.m. - 4:05 p.m.

Abstract: 227

A Long Term Clinical Experience with Three Different Nucleus Replacement Devices – Lessons Learned after 9

Years Follow up

L. Pimenta^{1,2}, L. Marchi¹, E. Coutinho¹, L. Oliveira^{1,3}

¹Instituto de Patologia da Coluna, São Paulo, Brazil, ²University of California San Diego, Neurosurgery, San Diego, CA, USA, ³Universidade Federal de São Paulo, Radiology, São Paulo, Brazil

4:06 p.m. - 4:12 p.m.

Abstract: 161

50-Patient European Study of a Viscoelastic Total Disc Replacement

B. Rischke¹, R.S. Ross², B. Joellenbeck³

¹DRK Kliniken Westend Berlin, Berlin, Germany, ²BUPA Hospital, Manchester, United Kingdom, ³Otto-Von-Guericke University, Magdeburg, Germany

4:13 p.m. - 4:19 p.m.

DISCUSSION

4:20 p.m. - 4:26 p.m.

Abstract: 126

Modified Magnetic Resonance Spectroscopy for the Diagnosis of Painful and Non-painful Lumbar Intervertebral Discs

D.S. Bradford¹, J.C. Lotz¹, J. Peacock², S. Hu¹, J. Claude², S.H. Berven¹

¹University of California San Francisco, Department of Orthopedic Surgery, San Francisco, CA, USA, ²Nocimed, Redwood City, CA, USA

4:27 p.m. - 4:33 p.m.

Abstract: 201

T1p-weighted MRI and Opening Discography Pressure are Quantitative Biomarkers of Disc Degeneration in Patients

P.M. Maurer¹, A. Borthakur², D.M. Elliott³, M. Fenty³, W.R.T. Witschey³, J. Yoder³, A. Singh³

¹3B Orthopaedics, Philadelphia, PA, USA, ²University of Pennsylvania School of Medicine, Center for Magnetic Resonance & Optical Imaging, Department of Radiology, Philadelphia, PA, USA ³University of Pennsylvania School of Medicine, McKay Orthopaedic Research Laboratory, Department of Orthopaedic Surgery, Philadelphia, PA, USA

4:34 p.m. - 4:40 p.m.

Abstract: 489

Development of a Diamond Composite Material for Total Disc Replacement Bearings Enables Non-Congruent Articulations Emulating Physiologic Kinematics

J.K. Taylor^{1,2}, B.N. Nguyen³, D. Harding⁴, G. Loesener⁴, V. Singh⁴, R. Dixon⁴, B.J. Pope⁴,

S. Despres⁵

¹Sacramento VA Medical Center, Orthopaedic Surgery, Loomis, CA, USA,

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4:41 p.m. - 4:47 p.m.

Abstract: 472

Accelerated Mitigation of Infection Due to Spinal Implants or Wound by Novel Photoactive Nanomats and Nanocoatings

R. Hershey¹, A.M. Azad^{1,2}, V. Goel², A. Biyani², N. Ebraheim², H. Serhan³

¹University of Toledo, Department of Chemical Engineering, Toledo, OH, USA, ²University of Toledo, Engineering Center for Orthopaedic Research Excellence (ECORE), Departments of Bioengineering and Orthopaedic Surgery Colleges of Engineering and Medicine, Toledo, OH, USA, ³DePuy Spine, Raynham, MA, USA

4:48 p.m. - 5:00 p.m.

DISCUSSION



8:00 a.m. - 9:45 a.m.

POSTERIOR DYNAMIC STABILIZATION

Moderators: Stephen Hochschuler, MD; C.K. Park, MD, PhD

8:00 a.m. - 8:06 a.m.

Abstract: 353

Evaluation of Polyethyleneterephthalate (PET) Cords from Retrieved Posterior Dynamic Stabilization Systems

S.M. Kurtz^{1,2}, A. Ianuzzi^{1,2}, M. Olsen², A. Ooij³, R. Ross⁴, T. Lanman⁵, J. Isaza⁶
¹Exponent, Inc., Philadelphia, PA, USA, ²Drexel University, Philadelphia, PA, USA, ³University Hospital Maastricht, Maastricht, Netherlands, ⁴Hope Hospital, Manchester, United Kingdom, ⁵Center City Doctors Hospital, Beverly Hills, CA, USA, ⁶Baton Rouge Orthopaedic Clinic, Baton Rouge, LA, USA

8:07 a.m. - 8:13 a.m.

Abstract: 452

Interspinous Ligamentoplasty in the Treatment of Degenerative Spondylolisthesis

S.W. Hong¹, K.H. Kim¹, H.Y. Lee², S.H. Lee²
¹Wooridul Spine Hospital, Orthopedic Surgery, Seoul, Korea, Republic of, ²Wooridul Spine Hospital, Neurosurgery, Seoul, Korea, Republic of

8:14 a.m. - 8:20 a.m.

DISCUSSION

8:21 a.m. - 8:27 a.m.

Abstract: 9

Survivorship Analysis of Interspinous Spacer for Treatment of Lumbar Spinal Stenosis and Disc Herniation

J.B. Park¹, C. G. Kong¹, H.Y. Won¹
¹The Catholic University of Korea, Uijeongbu, Korea, Republic of

8:28 a.m. - 8:34 a.m.

Abstract: 2

The Diam Interspinous Stabilization for Low Back Pain: 5 Years Follow-up

J. Buric¹, M. Pulidori¹
¹CDC Villanova, Functional Unit for Spinal Surgery, Florence, Italy

8:35 a.m. - 8:41 a.m.

Abstract: 253

Functional Dynamic Stabilization in Lumbar Spinal Stenosis with COFLEX® Interspinous Implant – Min. 3-year Results

R. Bertagnoli¹
¹ProSpine, Straubing, Germany

8:42 a.m. - 8:48 a.m.

DISCUSSION

Moderators: Steven Garfin, MD; Svante Berg, MD, PhD

8:49 a.m. - 8:55 a.m.

Abstract: 358

12-24 Month Results from a US IDE Trial Evaluating a Lumbar Posterior Dynamic Stabilization (PDS) System

N. Anand¹, M. Lorio², R. Rosemann¹
¹Cedars-Sinai Medical Center, Los Angeles, USA, CA, ²Neuro-Spine Solutions, Bristol, TN, USA

8:56 a.m. - 9:02 a.m.

Abstract: 255

3-year Results from a Prospective, Randomized IDE Study of the Dynesys® Dynamic Stabilization System

R.J. Davis¹, R. Delamarter², J. Maxwell³, S. John⁴, W. William⁵, J. Wingate⁶
¹Greater Baltimore Medical Center, Neurosurgery, Towson, MD; USA, ²The Spine Institute, Santa Monica, CA, USA, ³Scottsdale Spine Care, Scottsdale, AZ, USA, ⁴Twin Cities Orthopedics, Edina, MN, USA, ⁵University of Pennsylvania, Philadelphia, PA, USA, ⁶Spine Center, Warren, MI, USA

9:03 a.m. - 9:09 a.m.

Abstract: 155

Clinical Outcomes for Worldwide Cohort of 106 Lumbar Spinal Stenosis Patients Treated with ACADIA™

J.A. Youssef¹, J.J. Regan², R.F. Dryer³, C.A. Hartjen⁴, D.J. DiRisio⁵, W.B. Rodgers⁶, C.E. Oliveira⁷, R. Schoenmayr⁸, P.P. Varga⁹, K. Pettine¹⁰, A.L. Rhyne¹¹, E.B. Laxer¹¹, L.R. Spector¹¹, M.P. Lorio¹², J.J. Marzluff¹³, J.M. Highsmith¹³, K.A. Rahn¹⁴, R.M. Shugart¹⁴, A.D. Tahernia¹⁵, C.J. Morgan¹⁶, T.B. Briggs¹⁶, J.F. Ferguson¹⁶, W. Ceola¹⁶, N. Anand¹⁷, R.B. Delamarter¹⁷, S.C. Humphreys¹⁸, S. Hodges¹⁸
¹Spine Colorado, Durango, CO, USA, ²Spine Group Beverly Hills, Beverly Hills, CA, USA, ³Central Texas Spine Institute, Austin, TX, USA, ⁴Greater Baltimore Medical Center, Baltimore, MD, USA, ⁵Albany Medical Center, Albany, NY, USA, ⁶Spine Midwest Research, Jefferson City, MO, USA, ⁷Hospital Servidor Publico Estadual, Sao Paulo, Brazil, ⁸HSK, Dr. Horst Schmidt Klinik, Wiesbaden, Germany, ⁹National Centre of Spine Surgery, Budapest, Hungary, ¹⁰The Spine Institute, Loveland, CO, USA, ¹¹OrthoCarolina, Charlotte, NC, USA, ¹²Neuro-Spine Solutions, Bristol, TN, USA, ¹³Charleston Brain & Spine, Charleston, USA, ¹⁴Fort Wayne Orthopaedics, Fort Wayne, IN, USA, ¹⁵Desert Orthopedic Center, Rancho Mirage, CA, USA, ¹⁶Springfield Neurological & Spine Institute, Springfield, MO, USA, ¹⁷Cedar Sinai Spine Center, Santa Monica, CA, USA, ¹⁸The Center for Sports Medicine & Orthopedics, Chattanooga, TN, USA

9:10 a.m. - 9:16 a.m.

DISCUSSION

9:17 a.m. - 9:23 a.m.

Abstract: 172

Clinical Outcomes after Posterior Dynamic Transpedicular Stabilization with Limited Lumbar Discectomy: Carragee System Classification of Lumbar Disc Herniations

T. Kaner¹, M. Sasaki², T. Oktenoglu², A.F. Ozer², M. Cosar³
¹Pendik State Hospital, Istanbul, Turkey, ²American Hospital, Istanbul, Turkey, ³Canakkale 18 March University, Faculty of Medicine, Canakkale, Turkey

9:24 a.m. - 9:30 a.m.

Abstract: 301

Clinical Assessment of Adjacent Level Effects (ALE) Induced by Stabilimax Lumbar Posterior Dynamic Stabilization (PDS) Implant through Measurement of Range of Motion (ROM) and Interpedicular Travel (IPT)

S.H. Kitchel¹, N.C. Wharton², A.C. Khandha³
¹Oregon Health and Sciences University, Department of Orthopedic Surgery, Eugene, OR, USA, ²Medical University InnsbruckMetrics, Inc, Houston, TX, USA, ³Applied Spine Technologies, Rocky Hill, CT, USA

9:31 a.m. - 9:37 a.m.

Abstract: 251

Surgical Results of Non-fusion Stabilization with SSCS System for Degenerative Lumbar Spinal Diseases with Instability - Minimum 2 Year Follow-up

H. Ohta¹, Y. Matsumoto¹, U. Morishita¹, G. Huang¹, H. Kida¹, Y. Takemitsu¹
¹Oita Orthopaedic Hospital, Orthopaedic, Oita, Japan

9:38 a.m. - 9:44 a.m.

DISCUSSION

9:45 a.m. - 10:00 a.m.
AWARDS CEREMONY

10:00 a.m. - 10:45 a.m.
BREAK

10:45 a.m. - 12:00 p.m.
Symposium V

“Show Me the Data: Should We Be Operating on Low Back Pain?”

Moderator: Jeffrey Goldstein, MD

Case 1 – Single Level Degenerative Disc Disease

Pro: Matthew Gornet, MD
Con: Scott Hodges, DO

Case 2 – Degenerative Scoliosis



Pro: Frank Schwab, MD
Con: Scott Kitchel, MD

12:00 p.m. - 1:00 p.m.
SAS10 DEPARTURE PARTY

1:00 p.m. - 3:00 p.m.
**LUMBAR TDR/CERVICAL TDR:
Lightning Round**

Moderators: Karin Büttner-Janz, MD, PhD;
Scott Blumenthal, MD

1:00 p.m. - 1:04 p.m.

Abstract: 76

Clinical Results of Total Lumbar Disc Replacement Regarding to Various Aetiologies of Disc Degeneration: A Study with a 2 Year



nal Follow-up

B. Blondel¹, P. Tropiano¹, T. Marnay²

¹Université de la Méditerranée, Orthopaedic Surgery, Marseille, France,

²Clinique du Parc, Orthopaedic Surgery, Montpellier, France

1:05 p.m. - 1:09 p.m.

Abstract: 471

Total Lumbar Disc Replacement: Comparison of Clinical and Radiological Outcomes between L4L5 and L5S1 Levels

J. Delécrin¹, J. Allain², J.P. Steib³, J. Beaurain⁴, T. Dufour⁵, J. Huppert⁶, H. Chataigner⁷, L. Aubourg⁸, J.M. Nguyen⁹

¹University Hospital, Nantes, France, ²University Hospital, Creteil Paris, France, ³University Hospital, Strasbourg, France, ⁴University Hospital, Dijon, France, ⁵Hospital, Orléans, France, ⁶Clinique du Parc, St Etienne, France, ⁷Clinique, Besançon, France, ⁸LDR Medical, Troyes, France,

⁹University Hospital, Nantes, France

1:10 p.m. - 1:14 p.m.

Abstract: 307

Does the Presence and Location of Annular Defects Influence Clinical Outcomes Following Lumbar Total Disc Arthroplasty? A Prospective Study

J. Yue¹, S. Hermenau¹, C. Telles², R. Ramachandran²

¹Yale University School of Medicine, Orthopaedic Surgery, New Haven, CT, USA, ²Yale University School of Medicine, New Haven, CT, USA

1:15 p.m. - 1:19 p.m.

Abstract: 479

Comparison of Single Level L4-L5 versus L5-S1 Lumbar Disc Replacement: Results and Prognostic Factors

R. Sinigaglia¹, U. Nena², D.A. A Fabris Monterumici²

¹Padua University, Padova, Italy, ²Padua University Hospital, Padua, Italy

1:20 p.m. - 1:24 p.m.

Abstract: 56

Cost Comparison of Total Disc Replacement vs. Fusion in Patients with Insurance Denial for Disc Replacement

D.D. Ohnmeiss¹, C.S Hume¹, R.D. Guyer², J.E. Zigler², S.L. Blumenthal²

¹Texas Back Institute Research Foundation, Plano, TX, USA, ²Texas Back Institute, Plano, TX, USA

1:25 p.m. - 1:29 p.m.

Abstract: 58

Analysis of Adjacent Segment Re-operation Following Lumbar Total Disc Replacement

S.L. Blumenthal¹, S. Rainey¹, D.D. Ohnmeiss¹, J.E. Zigler², R.D. Guyer²

¹Texas Back Institute Research Foundation, Plano, TX, USA, ²Texas Back Institute, Plano, TX, USA

1:30 p.m. - 1:36 p.m.

DISCUSSION

1:37 p.m. - 1:41 p.m.

Abstract: 287

Effect of Operative Level and Lumbar TDR Design on Disc Height, Settling, and Subsidence: A Prospective Randomized Study Comparing an Unconstrained, Semi-constrained, and Constrained Implant

R. Garcia¹, J. Yue², P. Newman³, N. Wharton³, J. Hipp³

¹Orthopedic Care Center, Aventura, FL, USA, ²Yale University School of Medicine, Orthopedic Surgery, New Haven, CT, USA, ³Medical Metrics, Inc, Houston, TX, USA

1:42 p.m. - 1:46 p.m.

Abstract: 306

The Influence of Total Disc Arthroplasty Baseplate Design on Anterior/Posterior Endplate Loading

A. Valdevit^{1,2}, K. Verma¹, T. Errico¹, A. Rajadhyaksha¹, J. Kamerlink¹, S. Xavier¹, E. Knee²

¹NYU Hospital for Joint Diseases, New York, NY, USA, ²The Stevens Institute of Technology, Biomedical Engineering, Hoboken, NJ, USA

1:47 p.m. - 1:51 p.m.

Abstract: 82

Quantitative Comparison of UHMWPE Wear Particles Generated from ProDisc-L Total Disc Replacements Tested under ISO and ISO Plus Anterior-posterior Shear Inputs

J.L. Tipper¹, R.E. Vicars¹, J. Fisher¹, E. Ingham¹, R.M. Hall¹, T.D. Brown²

¹University of Leeds, Institute of Medical & Biological Engineering, Leeds, United Kingdom, ²University of Iowa, Department of Orthopaedics & Rehabilitation, Iowa City, IA, USA

1:52 p.m. - 1:56 p.m.

Abstract: 309**The Influence of Total Disc Arthroplasty Baseplate Design on Energy Transfer to the Vertebral Endplate**A. Valdevit^{1,2}, E. Knee¹, J. Kamerlink², Z. Fishkin², S. Xavier², A. Rajadhyaksha², A. Ritter¹, T. Errico²¹The Stevens Institute of Technology, Biomedical Engineering, Hoboken, NJ, USA, ²NYU Hospital for Joint Diseases, New York, NY, USA

1:57 p.m. - 2:01 p.m.

Abstract: 95**Blood Metal Ion Levels Following Implantation of the All-metal FlexiCore® Lumbar Intervertebral Disc Replacement, 24-36 Month Follow-up**J.R. Stieber¹, T.J. Errico², T. Bauer³, C. Whitaker⁴, G. Miz⁵, R. Sasso⁶¹St. Lukes-Roosevelt Hospital, Orthopaedic Surgery, New York, NY, USA, ²NYU Hospital for Joint Diseases, Division of Spine Surgery, New York, NY, USA, ³The Cleveland Clinic Foundation, Depts of Pathology, Orthopedic Surgery and the Spine Institute, Cleveland, OH, USA, ⁴Kansas Joint & Spine Institute, Wichita, KS, USA, ⁵Bone and Joint Physicians, Oak Lawn, IL, USA, ⁶Indiana Spine Group, Indianapolis, IN, USA

2:02 p.m. - 2:06 p.m.

Abstract: 165**Facet Joint Biomechanics at the Treated and Adjacent Levels after Total Disc Replacement**S. Botolin¹, V. Patel¹, S. Botolin¹, E.L. Burger¹, T. Baldini¹, C. Puttlitz², A. Petrella³, C. Abjornson⁴¹University of Colorado Denver, Orthopaedics, Aurora, CO, USA, ²Colorado State University, Ft. Collins, CO, USA, ³Colorado School of Mines, Golden, CO, USA, ⁴Synthes Spine, West Chester, PA, USA

2:07 p.m. - 2:13 p.m.

DISCUSSION**Moderators:** Anthony Fabrizi, MD; Rolando Garcia, MD

2:14 p.m. - 2:18 p.m.

Abstract: 315**The Predisposing Factors for the Heterotopic Ossification after Cervical Arthroplasty**S. Yi¹¹Spine and Spinal Cord Institute, Yonsei University, College of Medicine, Neurosurgery, Seoul, Korea, Republic of

2:19 p.m. - 2:23 p.m.

Abstract: 244**Heterotopic Ossification Following Cervical Total Disc Replacement: Iatrogenic or Constitutional?**C. K. Park¹, K.S. Ryu²¹Seoul St. Mary's Hospital, the Catholic University of Korea, Department of Neurosurgery, Seoul, Korea, Republic of, ²Seoul St. Mary's Hospital, the Catholic University of Korea, Seoul, Korea, Republic of

2:24 p.m. - 2:28 p.m.

Abstract: 300**A Comparison of Prodisc-C and Mobi-C Artificial Discs in Heterotopic Ossification after Cervical Arthroplasty**J.H. Shim¹, C.K. Park¹, H.J. Kim¹, D.H. Lim¹, D.C. Lee¹, D.H. Kim¹, J.K. Kim¹, J.H. Hwang¹¹The Leon Wiltse Memorial Hospital, Neurosurgery, Suwon, Korea, Republic of

2:29 p.m. - 2:35 p.m.

DISCUSSION

2:36 p.m. - 2:40 p.m.

Abstract: 74**Prospective, Randomized Study Comparing Cervical Total Disc Replacement to Anterior Cervical Fusion: Results from an FDA-regulated IDE Trial**R.D. Guyer¹, C. Laurusssen², D. Coric³, C. Gordon⁴, P. Nunley⁵, C. Carmody⁶, T.A. Dimmig⁷, W. Taylor⁸, R. Buckley⁹, J. Donner¹⁰, J. Rhee¹¹, P.C. Gerszten¹², P.J. Tortolani¹³, J. Rappaport¹⁴, R.Q. Knight¹⁵, G. Dix¹⁶, K.T. Foley¹⁷, F.D. Bitan¹⁸, R. Bains¹⁹, H.N. Herkowitz²⁰¹Texas Back Institute, Plano, TX, USA, ²Tower Orthopedics and Sports Medicine, Beverly Hills, CA, USA, ³Carolina Neurosurgery and Spine Associates, Charlotte, NC, USA, ⁴Gordon Spine Associates, Tyler, TX, USA, ⁵Spine Institute of Louisiana, Shreveport, LA, USA, ⁶Plano Orthopedic Sports Medicine and Spine Center, Plano, TX, USA, ⁷Triangle Orthopedics Associates, Durham, NC, USA, ⁸University of California San Diego, San Diego, CA, USA, ⁹Slocum Dickson Medical Group, New Hartford, CT, USA, ¹⁰Rocky Mountain Associates in Orthopedic Medicine, Loveland, CO, USA, ¹¹Emory Orthopaedics & Spine Center, Atlanta, GA, USA, ¹²University of Pittsburgh Medical Center, Pittsburgh, PA, USA, ¹³Orthopaedic Associates, P.A., Towson, MD, USA, ¹⁴Sierra Regional Spine Institute, Reno, NV, USA, ¹⁵Orthopedics International Spine, Seattle, WA, USA, ¹⁶Maryland Brain and Spine Center, Annapolis, MD, USA, ¹⁷Semmes-Murphey Clinic, Memphis, TN, USA, ¹⁸Manhattan Orthopaedics, P.C., New York, NY, USA, ¹⁹Kaiser Oakland Spine Surgery, Oakland, CA, USA, ²⁰William Beaumont Hospital, Royal Oak, MI USA

2:41 p.m. - 2:45 p.m.

Abstract: 66**The Correlation between Sagittal Alignment and the Outcome of Cervical Total Disc Replacement**A. Kasis¹, R. Taranu¹, L. Marshman¹, T. Friesem¹¹University Hospital of North Tees, Spine Unit, Stockton-on-Tees, United Kingdom

2:46 p.m. - 2:50 p.m.

Abstract: 425**Clinical Outcomes after Cervical Disc Arthroplasty for Axial Neck Pain vs. Radiculopathy/Myelopathy**M.F. Gornet¹, J. Pelozo², J.K. Burkus³, B.A. Taylor⁴, R. Dryer⁵, R. Bertagnoli⁶¹The Orthopedic Center of St. Louis, Spine Research Center, St. Louis, MO, USA, ²Center for Spine Care, Dallas, TX, USA, ³The Hughston Clinic, Columbus, OH, USA, ⁴The Orthopedic Center of St. Louis, St. Louis, MO, USA, ⁵Central Texas Spine Institute, Austin, TX, USA, ⁶ProSpine, ProSpine, Straubing, Germany

2:51 p.m. - 3:00 p.m.

DISCUSSION**SAS CONCLUDES**