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*Disclosures are listed in the ISASS13 Abstract Book
ISASS Mission & Past Presidents

PAST PRESIDENTS

Jean-Charles LeHuec, MD, PhD, France
President 2011-2012

Thomas Errico, MD, USA
President 2010 - 2011

Chun-Kun Park, MD, PhD, Korea
President 2009 - 2010

Karin Büttner-Janz, MD, PhD, Germany
President 2008 - 2009

Hansen A. Yuan, MD, USA
President 2007 - 2008

Stephen Hochschuler, MD, USA
President 2006 - 2007
Founding Member

Thierry Marnay, MD, France
President 2005 - 2006
Founding Member

Rudolf Bertagnoli, MD, Germany
President 2004 - 2005
Founding Member

(the late)
Charles Ray, MD, USA
President 2001 - 2004
Founding Member

PAST BOARD MEMBERS

Gary L. Lowery, MD, PhD, USA
Founding Member

Michael Mayer, MD, Germany
Founding Member

Hallett Mathews, MD, USA

ISASS BOARD OF DIRECTORS

The Board of Directors provides leadership for ISASS by upholding ISASS’ vision, purpose and values; setting the broad policies, direction and priorities of the organization; ensuring that ISASS has highly effective leadership; providing fiduciary oversight; and maintaining the integrity of ISASS services and products developed for the benefit of ISASS members.

MISSION STATEMENT

ISASS is an international, scientific and educational society organized to discuss and assess existing strategies and innovative ideas in the clinical and basic sciences related to spine surgery to enhance patient care.

ABOUT ISASS

Born from the trend in the spine industry to look at motion preservation as an alternative to fusion in the year 2000, The International Society for the Advancement of Spine Surgery (formerly The Spine Arthroplasty Society) - has worked to achieve its mission of acting as a global, scientific and educational society organized to provide an independent venue to discuss and address the issues involved with all aspects of basic and clinical science of motion preservation, stabilization, innovative technologies, MIS procedures, biologics and other fundamental topics to restore and improve motion and function of the spine for: surgeons, scientists, inventors and others. ISASS is dedicated to advancing major evolutionary steps in spine surgery.

ISASS is a special interest group of medical and associated specialists devoted to the field of clinical and structural amelioration and restoration of the joints of the spinal column. The society’s focus is on restoration, or replacement and potential return to normal function lost by degenerative conditions of spinal joints, especially where prostheses or orthoses may be required to accomplish these goals.

The International Journal of Spine Surgery (formerly SAS Journal) is the official scientific journal of ISASS and the Society for Minimally Invasive Spine Surgery. Since its establishment in 2007, the goal of The International Journal of Spine Surgery is to promote and disseminate online the most up-to-date scientific and clinical research into innovations in motion preservation and new spinal surgery technology, including basic science, biologics, and tissue engineering. The IJSS is dedicated to educating spine surgeons worldwide via video and interactive technologies and by reporting on the scientific basis, indications, surgical techniques, complications, outcomes, and follow-up data for promising spinal procedures.
2012 - 2013 ISASS Board of Directors

Steven Garfin, MD
President
President 2012 - 2013
University of California, San Diego, Orthopaedic Surgery
San Diego, CA USA

Luiz Pimenta, MD, PhD
Incoming President
Santa Rita Hospital, Chief of Spine Surgery
Sao Paulo, Brazil

Gunnar B. J. Andersson, MD, PhD
Treasurer
Department of Orthopedic Surgery Rush University
Chicago, IL USA

Michael Ogon, MD
Orthopedic Hospital Spiesing
Vienna, Austria

Hee Kit Wong, MD, PhD
Department of Orthopaedic Surgery, NUS
Singapore

Jeffrey Goldstein, MD, FACS
NYU Hospital for Joint Diseases, Spine
New York, NY USA

Jean-Charles LeHuec, MD, PhD
President 2011 - 2012
Victor Segalen University, Orthopaedics,
Bordeaux, France

Questions? (866) 423-9440 (U.S.) +1(630) 995-9994 (Int’l)
Advocacy for Your Patient

IASP - International Advocates for Spine Patients, an advocacy organization whose calling is to work for high quality, widely accessible, cost effective, medically indicated spine care for patients around the world.

The IASP mission is to partner patients, physicians, medical professionals and the medical industry. Our goal is to create a single, unifying voice with a consistent message for spine patients. Our efforts are funded by contributions, please contact us at: info@spinepatientadvocacy.org to donate to IASP.

Membership is complimentary for spine patients, ISASS members and only $30 for non-members.

The Faces of Spine Surgery

Individually we are a drop, together we are an ocean, and we want to be a very loud ocean of activity, to do that, we need your patients. If we are to partner with patients we need to hear and share their stories. We want to hear how spine surgery has improved their quality of life. How they put off having surgery due to coverage concerns or fear of the outcome, but overcame those concerns and are now living a pain free, productive and happy life. If we are to dispell myths we have to have stories from real patients to share. Your patients love you, let’s share the love and change the image of spine surgery through the successes of your patients. If we are to advocate for better coverage, we need to share the success stories and the fights some patients have had to wage to overcome the challenges of denials.

Please encourage your patients to share their stories with us. These success stories will put a face to the Spine Surgery patient, will put a voice to their needs and concerns and will add to the “real world” spine treatment information IASP is collecting to support advocacy efforts. If you have patients that have been denied coverage or reimbursement by a public or private payor for a medically indicated spine procedure to improve your quality of life, we want to hear these stories as well.

Have all your patients log onto www.SpinePatientAdvocacy.org to enter the Faces of Spine Surgery contest. Stories may be submitted in a video clip or YouTube format or in writing. Stories will be reviewed and researched. The top stories that best fit the IASP mission will be awarded a $50 Visa gift card. We will use these stories to put a Face to the Spine Surgery Patient, to put emotions, feelings, struggles, endurance and empathy to the plight of the patient. This is our mission, this is our goal, this is our passion. Together, we can make a difference.
Taking Spine Surgery Into The Future

ISASS, the International Society for the Advancement of Spine Surgery is a global, scientific and educational society organized to provide an independent venue to discuss and address the issues involved with all aspects of basic and clinical science of spine surgery, motion preservation, stabilization, innovative technologies, MIS procedures, biologics and other fundamental topics to restore and improve motion and function of the spine and the patient. ISASS is a place for surgeons, scientists, inventors and others dedicated to progress in spine surgery.

The World’s Best Thinking About Spine

The field of spine surgery is evolving globally. With innovations originating in every continent, it’s imperative that those committed to advancing spine surgery have a platform for discussion and education that encompasses the international community. With members from around the globe and chapters in China, India, Korea, Latin America, the Middle East, Taiwan and Turkey, ISASS is the society for forward-thinking spine surgeons in tune with ideas, treatments, technologies, and scientific innovations from every corner of the world. You are invited to join ISASS to surround yourself with the world’s best thinking about spine surgery.

How Does Membership Help You Become a Better Spine Surgeon?

Becoming a member of ISASS gives you:

- Access to research, articles, and information from the global leaders in spine surgery
- CMEs offered through the annual conference and complimentary access to the online Interactive Education Program through MagniGroup
- Online access to up-to-the-minute news on spine surgery advancements, techniques and related products
- An email subscription to the ISASS Spinal News International newsletter
- A subscription to the International Journal of Spine Surgery
- Access to online presentations and discussion groups
- Access to ISASS papers, presentations, research and membership directory
- Listing in the “Find a Member” search on the ISASS website so that patients can find and contact you
- Discounted registration fees for all ISASS-sponsored programs including the Annual Conferences, and the Asia Pacific and Latin America chapter conferences
- CDs with information from previous meetings

Make Your Voice Heard

We exist not only to learn from each other, but also as the collective voice of the world’s spine surgeons. By advocating for spine surgeons and spine patients, we can help protect the rights of those in the field and promote sound public policy.

Becoming a part of ISASS gives you a stronger voice in the matters most important to your practice.

ISASS Membership Information

Advancements in spine surgery are happening everywhere. You’re invited to join us.

Membership is open to all spinal specialists, groups or organizations, including government and industry, whose common cause is the advancement of spine surgery.

Membership categories are as follows:

REGULAR MEMBERSHIP
- Surgeons

AFFILIATE MEMBERSHIP
- Industry

OTHER MEMBERSHIP
- Scientists
- Resident
- Fellow
- Nurse
- Physical Therapist
- Physician’s Assistant
- Retired

The Society has been duly constituted under law with officers, directors and committees as defined in its bylaws.

Join ISASS at:
http://www.isass.org/h/become_a_member.html

Questions? (866) 423-9440 (U.S.) +1(630) 995-9994 (Int’l)
ISASS began adding chapters in 2004 with the KOSAS-Korean Chapter. In 2007 we added the Chinese Chapter and in 2008 added the Middle East and India Chapters. ISASS added the Taiwan Chapter in 2009 and the Latin America Chapter in June 2010 when Latin America hosted their first Meeting in Los Cabos, Mexico. The Turkey Chapter was added in January 2011 and hosted their first meeting in November of that year.

The purpose of the ISASS chapters is to provide a local forum for personal and professional development, provide an opportunity to network with others in the local spine community, gather information on how others are handling spine issues, provide insights into various spine procedures and policies and build relationships and contacts with other spine professionals from your area.

Membership in an ISASS chapter means access to a local network of spine professionals in your community that can broaden your skills and make you more valuable to your organization. There are resources and services available through ISASS that local chapters can’t possibly duplicate, and there are resources and services available through your local chapter that ISASS can’t provide.

If you are a member of one of the ISASS Chinese, India, Korean, Middle East, Taiwan, Latin America and Turkey chapters, we encourage you to become a member of ISASS! Please contact your local chapter to get a special membership application for a reduced fee for the ISASS membership.

Membership in an ISASS chapter is separate and apart from membership in ISASS.

Maximize your opportunities by becoming a member of ISASS and your local chapter. It’s a winning combination!

Our ISASS Chapter Presidents are:

- ISASS China Chapter: Dewei Zou, MD
- ISASS India Chapter: Sajan K. Hegde, MD
- ISASS Korea Chapter: Chong-Suh Lee, MD
- ISASS Latin America Chapter: Roberto Diaz, MD
- ISASS Middle East Chapter: Walid I. Attia, MD, MSc, PhD
- ISASS Taiwan Chapter: Cheng-Hsing Kao, MD
- ISASS Turkey Chapter: Cumhur Kilincer, MD, PhD
ISASS Committees

This section contains the names of those members serving on our committees
They are appointed by the Board of Directors

Committee terms will end in 2014

CME Committee
This committee shall be chaired by a selected member of the ISASS, appointed by the Board with assistance from selected consultants that specialize in the process of ensuring that all aspects of the ISASS CME program are developed appropriately. Conclusions and recommendations will be presented to the Board for review and actions to be taken. The Committee will discuss and provides interpretation of the ACCME guidelines regarding accreditation policies and decisions. It will concentrate on evaluating the effectiveness of the Society’s system of accreditation, including the accreditation requirements and its processes for funding and support. This committee also forwards actions regarding accreditation decisions to the full Board of Directors for ratification. The CME Committee will work in the development and adherence of all CME rules and regulations. They will review all ISASS sponsored programs to make sure that the ISASS provides continuing education programs on substantive, practice-related subjects. The CME Committee Chair and ISASS Administrative staff representative will work with the Program and Education Committee to ensure ACCME rules are followed and appropriate documentation is maintained.

Chairman:
Rolando Garcia, MD - USA
Fred Geisler, MD, PhD - USA
Robert Havey, BS - USA
Scott Leary, MD - USA
George Miz, MD - USA
Leonard Voronov, MD, PhD - USA
Heather Howard - ISASS

CME Provider:
Medical Education Resources - USA

Education Committee
The committee will have a chair and a vice chair appointed by the Board as well as selected member to staff the committee. An ISASS Administrative team member will also sit on the education committee; this staff person will liaison with the CME committee as well to ensure all programs follow the ACCME rules. The main goal of the Education Committee is to educate and promote medical excellence in the care of spine. The committee is charged with devising goals and guidelines for the coordinating efforts of the Society to satisfy the changing needs of its membership in the field of continuing education. They will work closely with the CME committee to ensure the ISASS educational programs meet all guidelines and requirements. It is the goal of ISASS to be the leader in providing education and training opportunities through short courses, workshops, publications, seminars and conferences. This committee will regularly explore cost-effective training opportunities applicable to spine surgeons worldwide. They will develop new programs for those who cannot attend ISASS sponsored seminars, such as short courses, distance learning programs and sanctioned educational opportunities.

Chairman:
Jean-Charles LeHuec, MD, PhD - France
Todd Albert, MD - USA
Neel Anand, MD - USA
Paul Anderson, MD - USA
Scott Blumenthal, MD - USA
Hee-Kit Wong, MD - Singapore
Ken Yonemura, MD - USA
Heather Howard - ISASS
Melanie Mitchell - ISASS

Finance and Audit Committee
This Committee of the Board shall consist of the Treasurer as Chair, Second Vice President and the Executive Director in coordination with the Public Accountants serving the Society. This Committee shall formulate all investment policies of the Society, subject to the approval of the Board. The Committee will assess the financial condition of the Society on a quarterly basis. The role of this Committee is to review proposed budgets and present recommendations and findings to the full Board of Directors for approval. They will track income and expenses and make recommendations as necessary. The group will advise the Board of Directors and provide guidance and direction to the Executive Director on all matters relating to financial management. This committee serves as the watchdog for the financial stability of the organization, reviewing banking and investment options and establishing procedures for investigating and making recommendations for large expenditures.

Treasurer:
Gunnar Andersson, MD - USA
Fepi Paramarti - ISASS
Kristy Radcliffe - ISASS

Questions? (866) 423-9440 (U.S.) +1(630) 995-9994 (Int’l)
**ISASS Committees**

**IASP Public Policy and Advocacy Committee**
This Committee shall combine Surgeons and industry, appointed by the President and approved by the Board. They will work to form policies and offer a platform for creating a close collaboration between industry and the surgeons. They will pay close attention to industry involvement in ISASS activities, but will ensure that they will not dominate the educational programming or society agenda. They will create the best possible relationship to benefit both sides to create a harmonious cooperation. They will make sure that the co-existence between industry and the surgeon community is respectful, cooperative and beneficial for progress. **IASP Public Policy and Advocacy Committee** shall make efforts to coordinate the involvement of members of spine-related Industries with the interests of the Society in furthering improved spine care for patients. This may include special focus meetings, approved by the Board.

They will address and review information to form policies related to the professional and legal image and functions of the Society. Issues for review shall be brought to the Board by any Board member and Executive Director. This Committee could deal with some of the issues coming from FDA approvals and the CMS. The Committee would serve in an advisory capacity and provide guidance in identifying experts to speak at FDA, government or congressional briefings, assist in crafting public policy/position statements that reflect the concerns of IASP, surgeons and the spine care industry.

**Chairman:**
Gunnar Andersson, MD, PhD - USA & Frank Phillips, MD - USA

Dom Coric, MD - USA
Charles Gilbride - Alphatec - USA
David Hovda - SpinalMotion - USA
Sherry Thornton - Medtronic - USA
Pat Miles - Nuvasive - USA
Sharon Schulzki - DePuy-Synthes - USA
Hassan Serhan, PhD - DePuy-Synthes - USA
Chris Bono, MD - USA
Isador Lieberman, MD - USA
Hal Mathews, MD - USA
John Ratliff, MD - USA

David Porter - ISASS
Kristy Radcliffe - ISASS

**Exhibitor Advisory Board**
The Exhibitor Advisory Work Group will consist of a cross section of exhibitors totaling 10 representatives and at least one ISASS representative. They will handle exhibit booth arrangements and suggest ways that ISASS is aimed at enhancing the exhibitor experience to determine best practices for each ISASS Annual Conference.

Erin Bicho - DePuy
Katie Daniel - Medtronic
Tanja Dold - Aesculap
Jill Helgerson - IMDS
Brad Larson - Zimmer Spine
James May - Centinel Spine
Kim Murray - Thompson Surgical
Patsy Peterson - LDR
Dora Sambdman - NuVasive
Annie Schussler - Buxton Biomedical
Theresa Simpson - K2M

Heather Howard - ISASS

**International Journal of Spine Surgery Committee**
This Subcommittee shall be chaired by the International Journal of Spine Surgery Editor with support staff plus the Executive Director and staff. The Editor-in-Chief shall report pertinent status data to the Board at the Annual Conference and prepare a statement for the Member’s Business Meeting. The structural and functional details of this Committee shall be decided by the Editor with assistance from the Executive Director.

**Editorial Board**
**Editor-in-Chief:**
Hansen Yuan, MD, PhD
SUNY Upstate/Syracuse

**Associate Editors:**
Paul Anderson, MD, University of Wisconsin
Jack Zigler, MD, Texas Back Institute

**Special Deputy to the Editor-in-Chief:**
Donna D. Ohnmeiss, DrMed, Texas Back Institute

**Deputy Editors:**
Neel Anand, MD, Cedars Sinai Medical Center
Ali Araghi, DO, Texas Back Institute
Hyun Bae, MD, Institute at St. John’s Health Center
Frank Cammisa, MD, Hospital for Special Surgery
Edmund Chao, PhD, John Hopkins University School of Medicine
Federico Girardi, MD, Hospital for Special Surgery
Vijay K. Goel, PhD, University of Toledo
Larry Khoo, MD, University of California, Los Angeles
Choon-Sung Lee, MD, Assan Medical Center
Mohamed Maziad, MD, Maziad Orthopedic & Spine Associates
Frank Phillips, MD, Rush University Medical Center
Luiz Pimenta, MD, University of California San Diego,
Universidade Federal de São Paulo
John Regan, MD, FAC, D.I.S.C. - Sport and Spine Center
Alejandro Reyes-Sánchez, MD, National Orthopaedic Institute, Mexico
Harvinder Sandhu, MD, Hospital for Special Surgery
Matthew Scott-Young, MD, Pacific Private Clinic
Bjorn Stromqvist, MD, Lund University
Hee-Kit Wong, MD, National University Hospital Department of Orthopaedic Surgery, Singapore
Huiliin Yang, MD, First Affiliated Hospital of Soochow University
Dewei Zou, MD, 306 Hospital of PLA

**Associate Editors, MIS Section:**
Choll Kim, MD, PhD, University of California, San Diego

**SMISS Editor:**
Bill Taylor, MD, University of California, San Diego

**Managing Editor:**
Jonny Dover, BA

**Peer Reviewers:**
Samy Abdou, MD, Dept of Neurological Surgery, Kaiser Hospital
Celeste Abjornson, PhD, Hospital for Special Surgery
Demetrius Kasak Abrahao, MD, Eco Center - Cambui
Kuniyoshi Abumi, MD, DMSc, Hokkaido University Health Admin Center
Edward Ahn, PhD, Pioneer Surgical Technology, Inc.
Michael Ahrens, MD, Strandweg 4

The goal of the International Journal of Spine Surgery is to promote and disseminate online the most up-to-date scientific and clinical research into innovations in motion preservation and new spinal surgery technology, including basic science, biologics, and tissue engineering.

The Journal is dedicated to educating spine surgeons worldwide by reporting on the scientific basis, indications, surgical techniques, complications, outcomes, and follow-up data for promising spinal procedures.

Moving forward, the International Journal of Spine Surgery is now on a continuous publishing schedule to ensure that as soon as new research is accepted, it is available to the Journal’s readership. Abandoning issues in favor of creating a new, faster flow of information is another way in which the Journal stays true to the Society’s emphasis on cutting-edge techniques and technologies.

The International Journal of Spine Surgery is committed to innovation in the field of medical publishing.

We look forward to acting as a powerful conduit to distribute your advances to a large, global audience who can make use of them to enrich their patients’ lives.
**ISASS Committees**

**ISASS Coding and Reimbursement Task Force**
The Coding & Reimbursement Task Force is charged with identifying spinal surgery-related coding and reimbursement issues that may adversely impact patient access to medically indicated spine surgeries: developing for the Board's approval advocacy action plans on the society's behalf to address those issues; and, assisting in the execution of those advocacy action plans as appropriate and necessary.

**Chairman:**
Morgan P. Lorio, MD, FACS

Josh Auerbach, MD - New York, NY
Doug Beard, MD - Fort Collins, CO
Mauro Cataletto, MD - Minneola, NY
Terrence Julien, MD - Morgantown, WV
Scott Kitchel, MD - Eugene, OR
Richard Kube, MD - Peoria, IL
Isador Lieberman, MD - Plano, TX
Paul Park, MD - Ann Arbor, MI
Tony Schnuener, PA - San Diego, CA
Paul Schwaegler, MD - Seattle, WI
Kirsty Radcliffe - ISASS
David Porter - ISASS

**Advisory body:**
Barbara Cataletto, MBA - Minneola, NY
Jolayne Fisher, Woodbury - MN
Kelli Hallias - Minnetonka, MN
Tim Hunter - Washington, DC
Cindy Vandenbosch - Billings, MT
Jen Varela - San Diego, CA

**IT Committee**
This Committee shall have a Chair and Co-Chair plus a member of the ISASS Administrative team. The Committee shall operate the Society Website on the Internet and manage its layout and content. The members of this committee will work to enhance the ISASS website to ensure that current and relevant matters are addressed. The IT committee in conjunction with the designated member of the ISASS Administrative team will guide and direct the appointed webmaster to make necessary changes and upgrades to ensure member needs are met.

**Chairman:**
William Sears, MD - Australia
Manabu Ito, MD, PhD - Japan
Dilip Sengupta, MD, PhD - USA
Hyun Chul Shin, MD, PhD - South Korea
Michele Boylstein - ISASS

**Membership Committee**
The Membership Committee shall consist of a Chair and two other members of the Society appointed by the President. The chair and the two members of the Committee may succeed themselves in office for a further term of three years if elected by a simple majority of the Board. An ISASS Administrative staff member will also sit on this committee. The Membership Committee is responsible for increasing the number of members worldwide and to ensure members’ needs are met. This includes recommending ways for increasing the ISASS membership base, formulating coordinating and implementing plans for membership recruitment, ways to acknowledge and welcome new members and encourage their participation in ISASS Committees and ISASS sponsored activities. They will work with the designated member of the Executive Team of the ISASS in the development of a membership renewal program. This Committee will be charged with developing and maintaining a membership directory available online for the membership to access via the website. This Committee will also work to identify members and non-members’ needs and perceptions, analyzing them and making recommendations to the Board of Directors.

The ISASS Administrative staff member of the Membership Committee shall receive and review all applications for membership and forward applications to the Chair. The ISASS Administrative staff member shall advise the committee to consider and investigate any charge made against any member of the Society, acting under the provisions of these bylaws. The Membership Committee shall make recommendations to the Board, but is not empowered to take any action unless otherwise specifically authorized by the Board or as otherwise provided in these bylaws.

**Chairman:**
Jeff Goldstein, MD - USA
Michael Ahrens, MD - Germany
Ali Araghi, MD - USA
Syante Berg, MD, PhD - Sweden
Ashish Diwan, Prof. - Australia
Rick Geyer, MD - USA
Chun Kun Park, MD, PhD - South Korea
Choon Keun Park, MD, PhD - South Korea
Luiz Pimenta, MD, PhD - Brazil
Rick Sasso, MD - USA
Paul Slosar, MD - USA
Hee Kit Wong, Prof. - Singapore
Michele Boylstein - ISASS

**Past Presidents Committee**
This committee of the Board shall consist of the President, the two Vice Presidents, the Past Presidents and the Executive Director. It shall meet during the Annual Conference and at other times as needed, on a request by the President and the board. The Executive Director will report its conclusions and recommendations to the Board. This Committee reviews the current state of ISASS, determines whether the Society has met its goals and decides what changes to make within the society in light of the needs of its members and changes in the medical profession. In order to serve its purpose, the Committee develops a strategic plan to be reviewed annually which lays out ISASS objective in areas such as governance and administration, membership, member services, public service and it determines what steps to take to fulfill those objectives.

**Chairman:**
Jean-Charles LeHuec, MD, PhD - France

Thomas Errico, MD - USA
Chun-Kun Park, MD, PhD - South Korea
Karin Büttner-Janz, MD, PhD - Germany
Hansen Yuan, MD - USA
Thierry Marnay, MD - France
Stephen Hochsuler, MD - USA
Rudolph Bertagnoli, MD - Germany
Kristy Radcliffe - ISASS

Questions? (866) 423-9440 (U.S.) +1(630) 995-9994 (Int’l)
Nominating Committee
This Committee is chaired by the Immediate Past President along with two additional past presidents, chosen by the President, the Second Vice President and the Executive Director as observer and secretary. This Committee shall meet prior to the ISASS Board meeting held during the Annual Global Symposium and come forward to the President and Board with a recommended slate of new officers, principally a new Director of the board.

Chairman:
Jean-Charles LeHuec, MD, PhD - France
Stephen Hochschuler, MD - USA
Chun-Kun Park, MD, PhD - South Korea
Steven Garfin, MD - USA

Publications Committee
The Publications Committee shall consist of a Chair and Co-Chair appointed by the President on recommendations by the Journal Editor and Executive Director. The design, text, layout and editing of the newsletter, hard copy and online books and instructional course material test books all fall under the realm of this committee. They will develop standards and guidelines to ensure all items published by the ISASS or with ISASS endorsement meet the requirements set up by the Committee. The committee will monitor and approve all such materials with that goal in mind. They will assist in the appointment of editors, associate editors and editorial boards as well as offer advice and content ideas.

Chairman:
James Yue, MD - USA
Neel Anand, MD - USA
Federico Girardi, MD - USA
Ulrich Hähnle, PhD - South Africa
Larry Khoo, MD - USA
Choll Kim, MD, PhD - USA
Martin Knight, MD, FRCS, MBBS - UK
Jean-Charles LeHuec, MD, PhD - France
Dilip Sengupta, MD - USA
Jonny Dover - ISASS

Regional Chapter Committee
This Committee of ISASS shall have a Chair and Co-Chair appointed by the President of ISASS plus Directors or Presidents elected by the Regional Chapters. Regional Chapters (RC) of the International ISASS shall be in nations outside of North America and Europe, or in world regions with involvement of more than one country, or in big spine societies as long their active membership is more than 1,000 members. They may be formed and closely affiliated with the international ISASS, provided:
The purpose of this committee is to ensure that the Society enlists views from an international perspective, and to address pertinent international issues and make sure there is a collaborative exchange of information.

Chairman:
Roberto Diaz, MD - LASAS Chapter
Sajan Hegde, MD - ISASS India Chapter
Cheng-Hsing Kao, MD - ISASS Taiwan Chapter
Chong-Suh Lee, MD - ISASS Korea Chapter
Walid I. Attia, MD, MSc, PhD - ISASS Middle East Chapter
Cumhur Kilincer, MD, PhD - ISASS Turkey Chapter
Dewei Zou, MD - ISASS China Chapter
Michele Boylstein - ISASS

Research Committee
If a company, or agency, decides on a need for a specific, or general, research project for a specific device, product (biologic, implant, etc.), medication, etc. and would like the ISASS to sponsor, they would approach the Research Committee. In so doing, they would forward a written proposal to ISASS describing, in broad terms, their research needs, a limited/proposed study design (e.g. animal models, imaging studies, biologic assessment, etc.) that they feel would be necessary. They would also provide a rough overall (not specific) budget, based on their anticipation of costs.

The ISASS Research Committee would take this proposal and analyze it for scientific value (not assessing the device, implant, product, etc. itself, but only the scientific potential of the study, independent of the outcome). If appropriate they would then submit the request to the ISASS Board for review and vote for funding for the research.

Chairman:
Lisa Ferrara, PhD - USA
Gunnar Andersson, MD - USA
Jacques Bouchard, MD - Canada
Ashish Diwan, MD - Australia
Tae-Ahn Jahng, MD - South Korea
Sung-Jae Lee, PhD - South Korea
Melodie Metzger, MD - USA
Donna Ohnmeiss, DrMed - USA
Avinash Patwardhan, PhD - USA
William Sears, MD - Australia
Anthony Tsantrizos, PhD, MBA - USA
Parmenion Tsitsopoulos, MD, PhD - Sweden
Leonard Voronov, MD, PhD - USA
Kristy Radcliffe - ISASS
Dear Friends and Colleagues,

Thank you for attending and participating in ISASS13 in Vancouver. I hope you will make the 2013 meeting a “destination” event, not only for our world-class meeting program, but also to experience one of the best cities in the world.

ISASS continues to grow in size, stature and reputation. We are committed to represent ALL spine surgeons, and we continue to be focused on advocating for our members in increasingly challenging times. To support this advocacy work, we must maintain our commitment to science, innovation, and discovery — the hallmark of good clinical medicine around the globe. And we remain committed to being an INTERNATIONAL society, as this provides all of us greater opportunities to learn from one another. Such knowledge and interaction allows us to identify and address patient access barriers to optimal spinal surgeries and to devise strategies to address those problems wherever they arise. Our goal is simple: to be the society that represents Spine SURGEONS.

Following last year’s meeting, an analyst for PiperJaffray wrote, “The agenda of clinical research presentations at this year’s ISASS annual meeting was as strong as we’ve ever seen, as the efforts of clinicians and manufacturers to drive more robust and broad based clinical evidence in support of spinal fusion are beginning to bear fruit.” And our 2013 program is shaping up to be even better — you will find a robust agenda, one that will provide scientific and educational information that will improve your knowledge of current and future devices and techniques, and that will ultimately improve the care that you provide your patients.

And don’t forget all that Vancouver has to offer. With its scenic views, mild climate, and friendly people, Vancouver is known around the world as one of the best places to live and is a popular tourist attraction. Vancouver is also one of the most ethnically and linguistically diverse cities in North America.

Our program covers the gamut: Cervical Therapies and Outcomes, Lumbar Therapies and Outcomes, MIS Technique and Results, Biologic Therapies and Research, Navigation, Image-Guided Surgery and Robotic Assistance, Conservative Care and Injection Therapies, Biomechanics/Basic Science, Sports and Spine, and so much more.

I would like to extend my sincere thanks to the ISASS13 Program Chairs for their dedication to excellence and their commitment to all things spinal surgery-related:

- Overall Program Chair: Chris Bono, MD
- Basic Science Chair: Donna Ohnmeiss, DrMed
- Clinical Science Chair: Rick Sasso, MD
- MIS Chair: Robert Isaacs, MD
- Poster Chair: Yu-Po Lee, MD

Our goal is to include the best papers, covering the latest evidence on all aspects for the advancement of spine surgery, innovative surgical technologies, spinal arthroplasty, dynamic implants and biologics. We will offer the best of scientific academic programming for our attendees, as well as great interactive opportunities for our industry partners.

For spine surgeons around the world, ISASS13 offers the latest global learning opportunities and the chance to network with some of the world’s best spine surgeons.

Thanks for joining us in Vancouver!

Steven Garfin, MD
ISASS President 2012 - 2013
Dear Colleagues,

We welcome you to the 13th Annual Scientific Meeting of ISASS in beautiful Vancouver, British Columbia. This year’s program is sure to be educational, provocative, and thought-provoking.

The program committee has worked hard to present topics that are extremely timely and germane to all of spinal surgery. We have also raised the bar on scientific paper presentations, with particular sessions for best papers that received top scores during peer review. We will again offer the Hands-on Cadaveric Bioskills course, a favorite of our attendees, taught by world-class experts in cutting edge spinal technology.

As an attendee, you will notice a reflective theme to the annual meeting. Spinal surgery is at a crossroads. It is being attacked by the lay press and media, insurance providers, as well as within the field of medicine. As spinal surgeons, advocating for our patients’ best care, it is time that we become introspective.

The program committee has developed a symposium to fulfill this need: Value in spine care: How do we show how good we are? Another timely topic is the funding of future research efforts by industry. Should they maintain the same role that they’ve had all along, or is time for a new relationship? You will gain a tremendous insight from the symposium entitled: Industry-sponsored research: Business as usual or time for a new paradigm?

These reflective topics should not detract from the visionary mission of ISASS. As part of the presidential guest lecture symposium, we will learn about the development and role of nanotechnology. Further fostering the future of spinal care, a symposium dedicated to linking basic science to clinical care will explore how bench top research translated into patients feeling better.

We are confident that this year’s program will be different than any other in the past and hope that you find it as enjoyable to attend as it was for us to prepare.

Welcome!

Christopher Bono
Christopher Bono, MD
ISASS13 Overall Program Chair
ISASS13 Program Committee

PRESIDENT
Steven Garfin, MD - USA

OVERALL PROGRAM CHAIR
Christopher Bono, MD - USA

BASIC SCIENCE CHAIR
Donna Ohnmeiss, DrMed - USA

CLINICAL CHAIR
Rick Sasso, MD - USA

MIS CHAIR
Robert Isaacs, MD - USA

POSTER CHAIR
Yu-Po Lee, MD - USA

Basic Science Reviewers:
Howard An, MD - USA
Ashish Diwan, PhD - Australia
Lisa Ferrara, PhD - USA
Alok Sharan, MD - USA
William Sears, MD - Australia
Dilip Sengupta, MD - USA

MIS Reviewers:
Neel Anand, MD - USA
John Chi, MD
Larry Khoo, MD - USA
Jeffrey Lehmen, MD - USA
Zvi Lidar, MD - Israel
Paul Park, MD - USA
Dan Sciubba, MD
Kern Singh, MD - USA
Mike Wang, MD - USA
Christopher Yeung, MD - USA
Jim Youssef, MD - USA

Clinical Reviewers:
Todd Allen, MD, PhD - USA
Paul Anderson, MD - USA
Allen Carl, MD - USA
Antonio Castellvi, MD - USA
Jeffrey Coe, MD - USA
Bruce Darden, MD - USA
Sanjipal Gill, MD - USA
Jonathan Grauer, MD - USA
Rick Guyer, MD - USA
Scott Kitchel, MD - USA
Isador Lieberman, MD, MBA, FRCSC - USA
Pierce Nunley, MD - USA
Kenneth Pettine, MD - USA
Gilad Regev, MD - Israel
Paul Slosar, MD - USA
Jeffrey Spivak, MD - USA
Marek Szpalski, MD - Belgium
Alex Vaccaro, MD, PhD - USA
Douglas Wardlaw, PhD - UK
Peter Whang, MD - USA
Jack Zigler, MD - USA

Posters:
Nitin Bhatia, MD - UK
Alan Dang, MD - USA
Yong Hai, MD - China
Zvi Lidar, MD - Israel
This is an INTERACTIVE MEETING
Audience response with your own SMARTPHONE, IPAD, or LAPTOP

JUST 2 SIMPLE STEPS:

1. Connect to the following WiFi Network:
   ISASS2013

2. Open your Web browser and connect to the Web address:
   www.isass2013.com

Laptop users:
Just open Safari, Firefox, or Chrome browsers.
(type in address www.isass2013.com)

iPhone:
Wait for WiFi bars to appear at top of screen.
Tap on your preferred browser button.
(type in address www.isass2013.com)

Android Phone:
Tap on your preferred browser button.
Type in address www.isass2013.com

Windows Phone:
Tap on Internet button.
Type in address www.isass2013.com

Blackberry Phone:
1. On the home screen, select the connections icon or
   select the Manage Connections icon.
2. Select ISASS2013 WiFi Network.
3. Wait for WiFi icon on browser to appear and fill with white bars.
4. Type in address www.isass2013.com
5. Press Enter button.
6. Select ISASS2013 option from menu.
7. Type in address www.isass2013.com

International Phones:
You will NOT incur any charges by utilizing WiFi signal.

*Please leave event interface open in a browser window or tab, so you are ready to participate in live polling when called upon.

powered by Visiontree mobile
# INSIDE:

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### Tuesday, April 2

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<th>Time</th>
<th>Event</th>
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<tr>
<td>11:00am - 7:00pm</td>
<td>Registration</td>
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<tr>
<td>5:00pm - 7:00pm</td>
<td>Exhibit Hall Open</td>
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<tr>
<td>5:00pm - 7:00pm</td>
<td>Opening Reception (in Exhibit Hall)</td>
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### Wednesday, April 3

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>7:30am - 6:00pm</td>
<td>Registration</td>
</tr>
<tr>
<td>8:30am - 9:00am</td>
<td>Committee Meetings:</td>
</tr>
<tr>
<td></td>
<td>IJSS Peer Reviewers - Room #2</td>
</tr>
<tr>
<td></td>
<td>Past President’s Council - Room #5</td>
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<tr>
<td></td>
<td>CME Committee - Room #7</td>
</tr>
<tr>
<td></td>
<td>Membership Committee - Room #9</td>
</tr>
<tr>
<td>10:30am - 5:00pm</td>
<td>Exhibit Hall Open</td>
</tr>
<tr>
<td>9:00am - 10:15am</td>
<td>General Session:</td>
</tr>
<tr>
<td></td>
<td>Advocacy of MIS</td>
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<tr>
<td></td>
<td>Moderators: Choll Kim, MD and Frank Phillips, MD</td>
</tr>
<tr>
<td>10:30am - 11:00am</td>
<td>Break on Exhibit Floor</td>
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<tr>
<td>11:00am - 12:00pm</td>
<td>General Session:</td>
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<tr>
<td></td>
<td>Lumbar Therapies Motion Preservation</td>
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<tr>
<td></td>
<td>Moderator: Antonio Castellvi, MD</td>
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<tr>
<td>12:00pm - 1:30pm</td>
<td>Industry Workshops</td>
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<tr>
<td>1:30pm - 2:30pm</td>
<td>Symposium: Value in Spine Care: How Do We Show How Good We Are?</td>
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<td></td>
<td>Chair: Frank Phillips, MD</td>
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<tr>
<td>2:30pm - 3:30pm</td>
<td>General Session: Best Papers - 1</td>
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<tr>
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<td>Moderators: Jean-Charles Le Huec, MD, PhD and Rudolf Bertagnoli, MD</td>
</tr>
<tr>
<td>3:30pm - 4:00pm</td>
<td>Break on Exhibit Floor</td>
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<tr>
<td>4:00pm - 5:00pm</td>
<td>General Session: Cervical Motion Preservation</td>
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<tr>
<td></td>
<td>Moderators: Rick Sasso, MD</td>
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<tr>
<td>5:00pm - 6:00pm</td>
<td>Cervical - Oral Posters</td>
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<td></td>
<td>Moderators: R. Todd Allen, MD and Zvi Lidar, MD</td>
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<tr>
<td>5:00pm - 6:00pm</td>
<td>MIS - Oral Posters</td>
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<td></td>
<td>Moderators: John O’Toole, MD and Christopher Yeung, MD</td>
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<tr>
<td>5:00pm - 6:00pm</td>
<td>Deformity - Oral Posters</td>
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<td></td>
<td>Moderators: Isador Lieberman, MD, MBA, FRCSC and Gilad Regev, MD</td>
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<tr>
<td>5:00pm - 6:00pm</td>
<td>Lumbar - Oral Posters</td>
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<td></td>
<td>Moderators: Rolando Garcia, MD and Peter Whang, MD</td>
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<tr>
<td>5:00pm - 6:00pm</td>
<td>Cervical Arthroplasty - Oral Posters</td>
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<td></td>
<td>Moderator: Neel Anand, MD and Jeffrey Goldstein, MD</td>
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<tr>
<td>5:00pm - 6:00pm</td>
<td>Quality of Spine Care - Oral Posters</td>
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<tr>
<td></td>
<td>Moderators: Scott Blumenthal, MD and Yu-Po Lee, MD</td>
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<tr>
<td>8:00pm</td>
<td>Faculty Reception (by invitation only)</td>
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### Thursday, April 4, 2013

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>7:00am - 6:00pm</td>
<td>Registration</td>
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<tr>
<td>7:30am - 8:00am</td>
<td>Committee Meetings:</td>
</tr>
<tr>
<td></td>
<td>Education Committee - Room #7</td>
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<td></td>
<td>Industry Relations/Public Policy - Room #4</td>
</tr>
<tr>
<td></td>
<td>IT Committee - Room #9</td>
</tr>
<tr>
<td></td>
<td>Publications Committee - Room #2</td>
</tr>
<tr>
<td>10:30am - 5:00pm</td>
<td>Exhibit Hall Open</td>
</tr>
<tr>
<td>8:00am - 8:30am</td>
<td>General Session: Quality of Spine Care</td>
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<td></td>
<td>Moderator: Hansen Yuan, MD</td>
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<tr>
<td>8:30am - 10:10am</td>
<td>Symposium: Presidential Address, followed by Presidential Symposium</td>
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<td></td>
<td>World of Nanotechnology</td>
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<td></td>
<td>Samuel Stupp, PhD - Presidential Guest Speaker</td>
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<td></td>
<td>Nanotechnology - Ortho and Spine Surgery</td>
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<td></td>
<td>Bradley Weiner, MD - Presidential Symposium Speaker</td>
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<tr>
<td>10:10am - 10:40am</td>
<td>Break on Exhibit Floor</td>
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<tr>
<td>10:40am - 12:00pm</td>
<td>General Session: Best Papers - 2</td>
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<tr>
<td></td>
<td>Moderators: Karin Büttner-Janz, MD, PhD and Tom Errico, MD</td>
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<tr>
<td>12:00pm - 1:30pm</td>
<td>Industry Workshops</td>
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<td>1:30pm - 2:30pm</td>
<td>Symposium: The Yeti of the Spine: The Missing Link between Basic Science and Clinical Medicine</td>
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<td>Chair: Donna Ohnmeiss, DrMed</td>
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<tr>
<td>2:30pm - 3:00pm</td>
<td>General Session: Cervical - Clinical Outcomes</td>
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<td>Moderators: Michael Ogon, MD and James Yue, MD</td>
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<tr>
<td>3:00pm - 3:30pm</td>
<td>Transfer of Presidency &amp; Awards Ceremony</td>
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<tr>
<td>3:30pm - 4:00pm</td>
<td>Break on Exhibit Floor</td>
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<tr>
<td>4:00pm - 5:00pm</td>
<td>General Session: Lumbar - Cost Effectiveness Clinical Outcomes</td>
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<td>Moderators: Gilad Regev, MD and Yu-Po Lee, MD</td>
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<tr>
<td>5:00pm - 6:00pm</td>
<td>Case Studies World Café</td>
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<td>CS-6 Disc Herniation</td>
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<td>Moderator: Rick Sasso, MD</td>
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<td></td>
<td>L4-5 Stenosis-Spondylolisthesis</td>
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<td></td>
<td>Moderator: Antonio Castellvi, MD</td>
</tr>
</tbody>
</table>
Friday, April 5, 2013

7:00am - 3:30pm
Registration

7:30am - 8:00am
Committee Meetings:
Exhibitor Advisory Board - Room #7
Regional Chapter Committee - Room #9
Research Committee - Room #5

10:30am - 1:30pm
Exhibit Hall Open

8:00am - 9:00am
General Session: Infections/Tumor
Moderators: Chun-Kun Park, MD, PhD and James Yue, MD

9:00am - 10:00am
Symposium: Industry Sponsored Research: Business as Usual or Time for a New Paradigm?
Chairs: Steven Garfin, MD and Christopher Bono, MD

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

10:30am - 12:00pm
General Session: Cutting Edge Technology - Imaging Guidance
Moderators: Rudolf Bertagnoli, MD and Stephen Hochschuler, MD

12:00pm - 1:00pm
Lunch

1:00pm - 2:15pm
General Session: What's New in Biologics and Biomechanics
Moderators: Donna Ohnmeiss, DrMed

2:15pm - 3:30pm
General Session: Lateral Interbody Fusion
Moderator: Robert Isaacs, MD

The ISASS13 meeting is at your fingertips with an interactive CME app and our very own ISASS App which includes the ISASS13 full scientific program, a personalized program schedule you can create, an Exhibitor guide and so much more, all on your mobile device, tablet or computer.

For more information check out pages 44 - 45 and maximize your ISASS13 Conference Experience!
Do you want to network with colleagues you haven’t seen in a while?

Interested in meeting some of the best exhibitors in the industry?

Join us to kick off ISASS13 at our Opening Reception on Tuesday evening from 5pm - 7pm in the Exhibit Hall.

**ISASS13 Opening Reception**

Each year our ISASS Board, Program Committee, Speakers and presenters meet with our Industry Sponsors at an enjoyable cocktail reception.

It's our way of saying thank you for their contribution and service to the ISASS Annual Conference.
EDUCATIONAL OBJECTIVES
Upon completion of the CME-accredited portions of this program (agenda may be found on pages 51-69 in the Program book), participants should be better able to:

- Identify and describe the results of new research in spinal arthroplasty/surgical approach and clinical results for the management of conditions requiring treatment.
- Discuss practical clinical information aimed at improving diagnostic skills.
- Identify key aspects of the latest devices available for preserving the motion of the spine.
- Evaluate and determine a wider range of treatment and surgical options for patients with degenerative disc disease.
- Describe, compare and contrast innovative methods in both assessment and treatment options in spinal arthroplasty.

MEETING OVERVIEW
This accredited conference will discuss and address the issues involved with all aspects of basic and clinical science of motion preservation, stabilization, innovative technologies, MIS procedures, biologics and other fundamental topics to restore and improve motion and function of the spine. This education will be provided in many forms:

- Lectures
- Symposia
- Panel discussions to provide in-depth coverage of selected topics
- Exhibits demonstrating the newest devices and technologies
- Industry Workshops
- Paper and Poster abstracts to provide the most current information regarding clinical and basic science advances in spine surgery

TARGET AUDIENCE
Spine surgeons and other allied health care professionals involved with all aspects of basic and clinical science of motion preservation, stabilization, innovative technologies, MIS procedures, biologics and other fundamental areas to restore and improve motion and function of the spine.

LEARNING GOAL/PURPOSE
To provide spine surgeons and other allied health professionals with updated information on new techniques in spinal surgery.

PHYSICIAN ACCREDITATION
This activity has been planned and implemented in accordance with the Essential Areas and Policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint sponsorship of Medical Education Resources (MER) and ISASS. MER is accredited by the ACCME to provide continuing medical education for physicians.

CREDIT DESIGNATION FOR GENERAL SESSIONS
Medical Education Resources designates this live activity for a maximum of 19.75 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

PHYSICIAN ASSISTANTS ACCREDITATION FOR GENERAL SESSION
AAPA accepts certificates of participation for educational activities certified for Category I credit from AOACCME, Prescribed credit from AAFP and AMA PRA Category 1 Credit™ from organizations accredited by ACCME or a recognized state medical society. Physician Assistants may receive a maximum of 19.75 hours of Category I credit for completing this program.

NURSING ACCREDITATION FOR GENERAL SESSION
Medical Education Resources is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center’s Commission on Accreditation.

This CE activity provides 19.75 contact hours of continuing nursing education.

Provider approved by the California Board of Registered Nursing, Provider Number 12299, for 19.75 contact hours.

DISCLAIMER
The content and views presented in this educational activity are those of the authors and do not necessarily reflect those of Medical Education Resources and/or the ISASS. The authors have disclosed if there is any discussion of published and/or investigational uses of agents that are not indicated by the FDA in their presentations. The opinions expressed in this educational activity are those of the faculty and do not necessarily represent the views of Medical Education Resources and/or the ISASS. MER’s ANCC accreditation status does not imply endorsement by MER or ANCC of any commercial products displayed in conjunction with this activity.

Before prescribing any medicine, primary references and full prescribing information should be consulted. Any procedures, medications, or other courses of diagnosis or treatment discussed or suggested in this activity should not be used by clinicians without evaluation of their patient’s conditions and possible contraindications on dangers in use, review of any applicable manufacturer’s product information, and comparison with recommendations of other authorities. The information presented in this activity is not meant to serve as a guideline for patient management.

The ISASS disclaims any and all liability for injury or other damages resulting to any individuals attending a session for all claims, which may arise out of the use of techniques demonstrated therein by such individuals, whether these claims be asserted by a physician or any other person.
No reproductions of any kind, including audiotape and videotape or photo may be made of the presentations at the ISASS13 Symposium. The ISASS reserves all of its rights to such material, and commercial reproduction is specifically prohibited.

**DISCLOSURE OF CONFLICTS OF INTEREST**

Medical Education Resources insures balance, independence, objectivity, and scientific rigor in all our educational programs. In accordance with this policy, MER identifies conflicts of interest with its instructors, content managers, and other individuals who are in a position to control the content of an activity. Conflicts are resolved by MER to ensure that all scientific research referred to, reported, or used in a CME activity conforms to the generally accepted standards of experimental design, data collection, and analysis. MER is committed to providing its learners with high-quality CME activities that promote improvements or quality in health care and not the business interest of a commercial interest.

The society has identified the options to disclose as follows:

a. Grant/Research Support
b. Miscellaneous non-income support (i.e. equipment or services), commercially derived honoraria or other non-research related funding (i.e. paid travel).
c. Royalties
d. Stock Options
e. Consultant or Employee
f. Speaker’s Bureau
g. Nothing of value disclosed

All indication of the participant’s disclosure will appear after his or her names as does the commercial company institution that provided that support. A full complete listing is noted in this ISASS13 Abstract book. The ISASS does not view the existence of these disclosed interests or commitments as necessarily implying bias or decreasing in the value of the author’s participation in the Annual Conference.

**INSTRUCTIONS FOR OBTAINING CME CREDITS**

To receive continuing education credits, you must submit an evaluation indicating the sessions that you attended.

All attendees will be able to complete this evaluation through their own smartphone, iPad or laptop during the meeting.

Information on using this app can be seen on page 18 and 45 of the Program Book and 208 of the Abstract Book.

No paper evaluations will be distributed.

The evaluation form will be available online at: [www.isass2013.com](http://www.isass2013.com) and via a link on the ISASS web site at [www.isass.org](http://www.isass.org) AFTER the meeting. Please contact the ISASS Education Department at 630-995-9994 x807 should you have any questions. In order to process your certificate, please make sure you complete the evaluation prior to leaving the conference. The CME certificates of attendance will be mailed out within six weeks following the conference.
SPEAKER READY ROOM
It is **REQUIRED** that each speaker visit the Speaker Ready Room, (located in the lobby area next to Registration) **at least three (3) hours prior** to the scheduled session start time to submit their presentation materials and convey last-minute requests.

**Speaker Ready Room hours are:**
- Tuesday, April 2 9:00 a.m. - 7:00 p.m.
- Wednesday, April 3 7:30 a.m. - 6:00 p.m.
- Thursday, April 4 7:00 a.m. - 6:00 p.m.
- Friday, April 5 7:00 a.m. - 2:00 p.m.

AWARDS PRESENTATIONS
The ISASS - *The International Society for the Advancement of Spine Surgery’s* 13th Annual Conference will offer five awards:
- The SAS Leon Wiltse Award for Best Overall Paper *(sponsored by Dr. and Mrs. Hansen A. Yuan)*
- Best Basic Science Paper
- Best Poster
- The Charles D. Ray Award Best Clinical Paper
- Kostuik Innovation Award *(sponsored by Dr. Thomas Errico)*

Awards will be presented on Thursday afternoon from 3:00pm - 3:30pm in the General Session room located in the East Ballroom B-C. The purpose of these awards is to stimulate fundamental research in spine surgery and motion preservation technologies. Each award will consist of $2,000. It is an honor for the society to recognize and award these presenters for original, outstanding research in motion preservation and independence of thoughts, originality of approach, clarity and excellence of data presentation. Winners are selected from the Top 5 rated abstracts in each classification.

**2012 ISASS Leon Wiltse Award for Best Overall Paper**
“Analyzing the Relationships between Pain, Patient Expectations, and Satisfaction Following Spine Surgery”
D.D. Ohnmeiss, A.R Block, R.D. Guyer, Y. Ben-Porath, D. Burchett
James Yue, MD Overall 2012 Program Co-Chair presenting Donna Ohnmeiss, DrMed with award

Meeting Information

ATTENDEE RESOURCES

**ISASS HOUSING BUREAU AT REGISTRATION**
Please visit the ISASS Housing Bureau desk in the registration area for information and to ask questions regarding housing.

**LOST AND FOUND**
Please return any found items to the registration desk.

**COFFEE BREAKS**
The coffee breaks will take place in the Exhibit Hall area *(lounge area)* each morning and afternoon.

**POSTER INFORMATION**
The poster viewing hours are:
- Tuesday, April 2 5:00 p.m. - 7:00 p.m.
- Wednesday, April 3 10:30 a.m. - 5:00 p.m.
- Thursday, April 4 10:30 a.m. - 5:00 p.m.
- Friday, April 5 10:30 a.m. - 12:00 p.m.

Posters are designed to provide attendees with an in-depth learning experience. New investigations, new methods, and innovative research are featured in Poster Exhibits. Awards will be presented on Thursday afternoon from 3:00pm - 3:30pm in the General Session Room.

**GENERAL SESSIONS (PLENARY)**
The general sessions of the scientific program will be held from Wednesday, April 3 through Friday, April 5, 2013 in the East Ballroom B-C.

Come hear about new and innovative research, updated studies, and advances in spine surgery. Podium presentations will be followed by floor discussion. Attendees are encouraged to ask questions for a more interactive learning experience. The presentations are moderated by experienced members whose goal is to stimulate discussion. Refer to the Scientific Program Schedule, beginning on page 47 for session dates and times.

Questions? (866) 423-9440 (U.S.) +1(630) 995-9994 (Int’l)
EXHIBIT HALL LOCATION AND HOURS
See the latest in products, services and technology from the ISASS13 Exhibitors. The exhibitions for the ISASS13 Annual Meeting are located in the Exhibit Hall.

Hours of Operation:
Tuesday, April 2  5:00 p.m. - 7:00 p.m.
Wednesday, April 3  10:30 a.m. - 5:00 p.m.
Thursday, April 4  10:30 a.m. - 5:00 p.m.
Friday, April 5  10:30 a.m. - 12:00 p.m.

Please note: The Exhibit Hall will close briefly during the Presidential Speaker session, the Awards Ceremony and Presidential Exchange on Thursday. Announcements will be made prior to both events.

Absolutely no cameras are allowed in the Exhibit Hall. Violators will be removed from the premises and cameras will be confiscated.

EXHIBITS
The ISASS13 Annual Meeting Exhibits will provide you with the opportunity to explore the market place. Compare products first-hand and plan your purchases of products and services that will allow you to provide a higher level of care to your patients and effectively manage your practice.

The ISASS13 Exhibiting Companies will be displaying their products and services in the Exhibit Hall. To view the listing of companies that will be on display, go to page 34 of this Program Book.

MEMBERS’ BUSINESS MEETING
All ISASS Members are cordially invited to the Member’s Business Meeting on Wednesday, April 3, 2013 at 10:15 a.m. - 10:30 a.m. in the General Session room, East Ballroom B-C.

OPENING RECEPTION
All attendees, exhibitors and guests are invited to the Opening Reception in the Exhibit Hall on Tuesday, April 2, 2013 from 5:00 p.m. to 7:00 p.m.

REGISTRATION
All delegates must check-in at the Registration Desk. Badges are required and controlled for entrance to the General Sessions, Exhibit Hall, Breakout Sessions, Opening Ceremony and all social events.

Exhibitors must present a personalized business card for each person requiring a badge for their company.

REGISTRATION HOURS*
Tuesday, April 2  11:00 a.m. - 7:00 p.m.
Wednesday, April 3  7:30 a.m. - 6:00 p.m.
Thursday, April 4  7:00 a.m. - 6:00 p.m.
Friday, April 5  7:00 a.m. - 3:30 p.m.

*kindly note these registration hours are subject to change

BADGES
All congress badges will be marked to indicate the different categories of participation.

A $50.00 fee will be charged for lost badges and/or name changes on pre-registered badges and can be replaced at the registration desk.

ISASS COMMITTEE MEETINGS:
ISASS committee meeting locations will be held in these locations on the following days/times:

Wednesday, April 3rd
IJSS Peer Reviewers - 8:30am - 9am, Rm #2
Past President’s Council - 8:30am-9am, Rm#5
CME Committee - 8:30am-9am, Rm#7
Membership Committee - 8:30am-9am, Rm#9

Thursday, April 4th
Publications Committee, 7:30am - 8am, Rm#2
Industry Relations/Public Policy, 7:30am-8am, Rm#4
Education Committee, 7:30am-8am,Rm#7
IT Committee, 7:30am-8am, Rm#9

Friday, April 5th
Regional Chapter Committee, 7am-7:30am, Rm#9
Research Committee, 7:30am-8am, Rm#5
Exhibitor Advisory Board, 7:30am-8am, Rm#7
Nanotechnology: Special Presidential Guest Speaker
Prof. Samuel Stupp

Thursday, April 4, 2013
8:30am - 10:10am
World of Nanotechnology

Professor Samuel Stupp obtained his B.S. in chemistry at the University of California at Los Angeles, and his Ph.D. in materials science from Northwestern University. He spent 18 years at the University of Illinois at Urbana-Champaign where he was the Swanlund Professor of Materials Science, Chemistry, and Bioengineering. In 1999, he joined the faculty at Northwestern as Board of Trustees Professor of Materials Science, Chemistry, and Medicine, and later was appointed Director of Northwestern’s Institute for BioNanotechnology in Medicine.

Professor Stupp is a member of the U.S. National Academy of Engineering, the American Academy of Arts and Sciences, and the Spanish Royal Academy of Pharmacy. He is also a fellow of the American Physical Society, the Materials Research Society, the American Association for the Advancement of Science, the World Technology Network, and the World Biomaterials Congress. His awards include the Department of Energy Prize for Outstanding Achievement in Materials Chemistry, a Humboldt Senior Award, the Materials Research Society’s Medal Award, the American Chemical Society Award in Polymer Chemistry, and the Sir Edward Youde Memorial Award in Hong Kong. He has held the appointment of Joliot Curie Professor at Ecole Supérieure de Physique et de Chemie in Paris, Merck-Karl Pfister Visiting Professor in Organic Chemistry at MIT, Visiting Professor at the Institut de Science et d’Ingenierie Supramoléculaires in Strasbourg, and is currently Distinguished Professor of Eindhoven University of Technology in the Netherlands.

In 2009, Professor Stupp received an honorary doctorate from Eindhoven University for revolutionary research in complex molecular systems, and in 2011 an honorary doctorate from the National University of Costa Rica.

His research is focused on self-assembly and supramolecular materials with special emphasis in regenerative medicine, cancer therapies, and solar energy.
ISASS13 World Cafés
Thursday, April 4
5:00PM - 6:00PM

CASE STUDIES WORLD CAFÉ

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. ISASS13 will continue and expand on past successes with featured events developed by leaders in the spine industry.

World Café Case Studies and Demonstration Tables

At this year’s meeting, ISASS’ innovative Case Studies World Café program will be based around case studies on two topics:

- C5-6 Disc Herniation
- L4-5 Stenosis – Spondylolisthesis

The World Café is an intensive round table discussion program that presents a series of challenging case studies and allows participants to confer on treatment options and protocols.

Device demonstration tables will be added to expand the World Café program content. A tabletop for each participating device company will be available for hands-on product display. Surgeons will visit each tabletop for a specific period of time and rotate to the following table. The devices will remain in the room for the World Café session while related cases are discussed.

Participants must select either C5-6 Disc Herniation or L4-5 Stenosis-Spondylolisthesis cases to review.

After rounds of discussion, the groups will gather to share and explore emerging outcomes, insights and new knowledge. By cross-pollinating ideas and sharing thoughts, collective discoveries and outcomes will be developed that will be meaningful to case outcomes.

C5-6 Disc Herniation
Rick Sasso, MD
Room: 1

L4-5 Stenosis - Spondylolisthesis
Antonio Castellvi, MD
Room: 2/3
INSIDE:

Exhibit Hall Floor Plan  30
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Exhibitor Directory  32
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EXHIBIT HALL HOURS:

Tuesday, April 2  5:00 p.m. - 7:00 p.m.*
Wednesday, April 3  10:30 a.m. - 5:00 p.m.
Thursday, April 4  10:30 a.m. - 5:00 p.m.
Friday, April 5  10:30 a.m. - 12:00 p.m.

*OPENING RECEPTION IN EXHIBIT HALL
ISASS proudly recognizes our 2013 Partners for their outstanding year-round leadership in the advancement of spine surgery and to thank them for their support of our mission.

**Platinum level**

- Medtronic

**Silver level**

- DePuy Synthes SPINE
- Globus Medical

**Bronze level**

- Stryker
- Trans1
### Advanced Biologics LLC
- **Address**: 555 Corporate Drive Suite 260
- **City**: Ladera Ranch, CA 92694
- **Phone**: 800-272-0267  **Fax**: 480-287-9391

### Aesculap Implant System
- **Address**: 3773 Corporate Parkway
- **City**: Center Valley, PA 18034
- **Phone**: 508-528-2330  **Fax**: 508-590-6146
- **Website**: [www.asculapeusa.com](http://www.asculapeusa.com)

### ALPHATEC SPINE
- **Address**: Bat. Calypso 18, Parc Ariane 3 5, rue Alfred Kastler Guyancourt cedex, 78284
- **Phone**: 331-3930-6930
- **Website**: [www.scientx.com](http://www.scientx.com)

### Amedica Corp
- **Address**: 1885 West 2100 South
- **City**: Salt Lake City, UT 84109
- **Phone**: 801-839-3500  **Fax**: 801-839-3601
- **Email**: sryan@amedica.com
- **Website**: [www.amedica.com](http://www.amedica.com)

Amedica has a well-balanced portfolio which includes a full-line of spinal implants and instruments to address all spinal surgery indications including MIS techniques, PEEK and silicon nitride interbody spacers, biologics and deformity correction procedures. The goal at Amedica is to deliver innovative, cost-effective care globally.

### Aurora Spine
- **Address**: 1920 Palomar Point Way
- **City**: Carlsbad, CA 92008
- **Phone**: 760-424-2004  **Fax**: 760-424-2004
- **Email**: info@auroraspine.us
- **Website**: [www.auroraspine.us](http://www.auroraspine.us)

There are hundreds of companies in this industry all striving to bridge the gap between patient satisfaction and clinical success. Aurora Spine was formed to bridge that gap and bring innovation to minimally-invasive surgery, regenerative medicine, and the aging patient. Our philosophy is to make our implants match the patient’s anatomy, not to make their anatomy fit the implant. We are committed to make our devices better, less invasive, and most importantly something that truly helps the patient.

### Cadwell
- **Address**: 909 N Kellog Street
- **City**: Kennewick, WA 99336
- **Phone**: 509-735-6481  **Fax**: 509-783-6503
- **Website**: [www.cadwell.com](http://www.cadwell.com)

### Centinel Spine
- **Address**: 505 Park Ave 14th floor
- **City**: New York, NY 10022
- **Phone**: 212-674-3337  **Fax**: 646-304-3800
- **Email**: jmay@centinelspine.com
- **Website**: [www.centinelspine.com](http://www.centinelspine.com)

Founded in 2008, Centinel Spine, Inc. is an innovative spinal device company committed to the design and development of simple, biomechanically sound solutions for spinal stabilization and fusion. The company is recognized as a leader in the expanding Integrated Interbody Fusion spinal market segment.

### Crocker Spinal Technologies
- **Address**: 2825 Cottonwood Parkway Suite 330
- **City**: Salt Lake City, UT 84121
- **Phone**: 801-702-8596
- **Email**: customerservice@flexbac.com
- **Website**: [www.flexbac.com](http://www.flexbac.com)

Crocker Spinal Technologies debuts the FlexBAC Total Disc Replacement. The FlexBAC is an advancement to disc technology in that it is designed to not only restore motion to the operative level, but proper motion patterns to the operative and adjacent levels. Natural motion patterns are free of hyper and hypo-mobility and the associated degenerative effects. Further, this new type of mechanism is known to reduce implant height, eliminate measurable wear debris and prevent failure by fatigue.

### Emerson Consultants, Inc
- **Address**: 202 Water street #200
- **City**: Excelsior, MN 55331
- **Phone**: 952-374-6004  **Fax**: 952-374-6001

### Dynamic Disc Designs Corp
- **Address**: 62-1551 Estevan Rd.
- **City**: Nanaimo, BC V9S 3Y3
- **Phone**: 250-751-0897
- **Website**: [www.dynamicdiscdesigns.com](http://www.dynamicdiscdesigns.com)

Dynamic Disc Designs Corp. (ddd) is an intervertebral disc-spine modeling company. With a two-part disc, demonstrate 6 degrees of motion. Inspired by research, we hope to continue to provide the best in teaching models to professionals and device companies world-wide. We also hope to help the cause in better understandings of degenerative disc disease in the pursuit of improving therapeutic strategies. Discover the most realistic and anatomically accurate spinal disc models in the world.

### Emerson Consultants, Inc
- **Address**: 202 Water street #200
- **City**: Excelsior, MN 55331
- **Phone**: 952-374-6004  **Fax**: 952-374-6001

### Gallini U.S.
- **Address**: 6758 East Pris Ave SE
- **City**: Caledonia, MI 49316
- **Email**: ljohnson@gallinimedical.com
- **Website**: [www.gallinimedical.com](http://www.gallinimedical.com)

*Our new exhibitors are indicated in blue*
Exhibitor Directory

117
Gauthier Biomedical
2221 Washington St
Grafton, WI 53024
Phone: 262-546-0010 Fax: 262-546-0011
www.gauthierbiomedical.com

401
Globus Medical
2560 General Armistead Ave
Auburnd, PA 19403
Phone: 610-415-9000
www.globusmedical.com

116
Harvest Technologies Corp
40 Grissom Road Suite 100
Plymouth, MA 02360
Phone: 908-732-7540 Fax: 508-732-0400

419
IASP
2323 Cheshire Drive, Suite 101
Aurora, IL 60502
630-995-9994 x 810
www.spinepatientadvocacy.org

IASP - International Advocates for Spine Patients - is an organization dedicated to advocacy for high quality, widely accessible and cost effective spine care for patients around the world. The IASP advocacy mission is supported by physicians, patients and the medical industry. IASP is a sister organization to ISASS - The International Society for the Advancement of Spine Surgery. IASP was formed in 2011 and complements the ISASS educational mission through direct advocacy efforts on the behalf of spine patients, spine surgeons, physicians and the spine medical device industry. The goal of IASP is to create a single, unifying voice with a consistent advocacy message for spine patients, spine surgeons and the medical industry. IASP advocacy efforts are funded via contributions from spine surgeons, physicians and the medical industry.

213
ISASS Central
2323 Cheshire Drive, Suite 101
Aurora, IL 60502
630-995-9994

415
Joimax
14 Goodyear Suite 145
Irving, CA 92618
Phone: 949-859-3472 Fax: 949-859-3473
Email: Courtney.Sheedy@joimaxusa.com
www.joimaxusa.com

Joimax® offers system components for endoscopic spine surgery. TESSYS® is a truly minimally invasive approach for spine surgery entering transfornaminally, through a single incision, under local anesthetic and on an outpatient basis. Clinical indications for the Joimax® TESSYS® procedure are foraminal stenosis and disc herniation. The newly launched ShriII® - a multi-functional drill and resection system and the comprehensive line of HD endoscopy equipment are the latest Joimax® products.

406
K2M
751 Miller Drive SE
Leesburg, VA 20175
Phone: 703-777-3155 Fax: 703-777-4338
Email: tsimpson@K2M.com
www.K2M.com

K2M, Inc. is an innovative spinal device company committed to the research, development, and commercialization of simplified solutions for the treatment of complex spinal pathologies and procedures. The company is recognized as a worldwide leader in providing unique technologies for the treatment of deformity, degenerative, trauma, and tumor spinal patients. For additional information on K2M, please visit www.K2M.com.

313
Lanx
310 Interlocken Parkway Suite 120
Broomfield, CO 80021
Phone: 858-472-8825 Fax: 303-501-8444
Email: Anee.Fullerton@lanx.com
www.lanx.com

Lanx specializes in systems and implants for all segments of spinal surgery. Integrating leading technology, intellectual property and state-of-the-art engineering, each product is designed to simplify surgery and improve the quality of care for patients worldwide by providing surgeons with innovative spinal products.

301
LDR
4030 W Braker Lane #360
Austin, TX 78759
Phone: 512-344-3325 Fax: 512-344-3350
www.ldrspine.com

LDR creates innovative fusion and non-fusion spinal technologies benefiting patients in more than 25 countries. Our products are designed to make spine surgery easier to perform and the desired clinical results more readily achieved. LDR’s strong global presence is built on the success of products including the Mobi-C® Cervical Artificial Disc and the VerteBRIDGE® platform of zero-profile interbody devices. At LDR, we have a Passion for Innovation! *Mobi-C is not available in the United States.

200
Medtronic
2600 Sofamor Danek Drive
Memphis, TN 38132
Phone: 901-399-2965 Fax: 901-399-2012
www.medtronic.com

At Medtronic (www.medtronic.com), we’re committed to Innovating for life by pushing the boundaries of medical technology and changing the way the world treats chronic disease. To do that, we’re thinking beyond products and beyond the status quo - to continually find more ways to help people live better, longer.

221
Misonix Inc
1938 New Highway
Farmingdale, NY 11735
Phone: 631-927-9132 Fax: 631-694-3285

112
NASS
7075 Veterans Blvd
Burr Ridge, IL 60527
Phone: 630-230-3600 Fax: 630-230-3700
Email: rwasson@spine.org
www.spine.org

The North American Spine Society (NASS) is a multidisciplinary medical organization representing over 7,500 members dedicated to fostering the highest quality, evidence-based, ethical spine care by promoting education, research, and advocacy. With members from multiple specialties worldwide, NASS is your link to health care professionals invested in advancing spine care.

309
Nutech Medical, Inc
174 OXMOOR RD
BIRMINGHAM, AL 35209
Phone: 205-218-1675
WWW.NUTECHMEDICAL.COM

212
Nuvasive
7475 Lusk Blvd
San Diego, CA 92121
Phone: 858-909-1800 Fax: 858-909-2000
Email: dsambdman@nuvasive.com
www.nuvasive.com

*Our new exhibitors are indicated in blue
ISASS13 Exhibitor Directory

111 Orthorebirth Co Ltd
3-17-43 Chigasaki Higashi Tsuduki-ku
Yokohama, Kanagawa, 2240033
Phone: 81-45-5323650 Fax: 81-45-5323691
www.orthorebirth.com

101 OsteoMed
3885 Arapaho
Addison, TX 75001
Phone: 972-677-4600 Fax: 972-677-4731
www.osteomedcorp.com
OsteoMed is a global and innovative leader in the development and manufacturing of specialty surgical implants for the spine. The OsteoMed philosophy focuses on improved patient outcomes through minimally disruptive, anatomically friendly technology, and critical input from surgeons for streamlined surgical techniques. Products include next-generation interspinous fusion and facet fixation systems.

318 Paradigm Spine
505 Park Avenue 14th Floor
New York, NY 10022
Phone: 212-583-9700 Fax: 212-826-9509
Email: info@paradigmspine.de
www.paradigmspine.com
Paradigm Spine offers Degenerative and Scoliosis solutions in 50 countries. The company markets the coflex® Interlaminar Stabilization device for spinal stenosis, the coflex-F® Posterior Stabilization device for posterior fusion, the DCI® System designed as a functionally dynamic cervical spine implant, the DSS® Spinal Stabilization Pedicle based system and the GSP™ system (Growing Spine Profiler) to treat congenital pre-adolescent scoliosis, spinal deformities and TIS.

114 Pinnacle Spine Group
1601 Elm Street Suite 300
Dallas, TX 75201
Phone: 214-871-3230 Fax: 214-871-1620
www.pinnaclespinegroup.com
Pinnacle Spine Group was founded with the focused goal of developing innovative, cost-effective surgical solutions that benefit surgeons and provide better patient outcomes.

418 Pioneer Surgical
9600 Great Hills Trail Suite 160-E
Austin, TX 78759
Phone: 512-372-4355 Fax: 512-340-1481
Email: tonia.booth@pioneersurgical.com
www.pioneersurgical.com
Pioneer Surgical Technology, Inc. is a progressive medical device firm with a comprehensive portfolio of industry-leading orthopaedic, biological, and spine products. Pioneer is focused on creating innovative, cost-effective surgical solutions that benefit surgeons and provide better patient outcomes.

311 Richard Wolf Medical Instruments
Pforzheimer Straße 32
Knittlingen, IL 75438
Phone: 847-913-1113 Fax: 847-913-6959
Email: conventions@richardwolfusa.com
www.richardwolfusa.com
Richard Wolf features spine endoscopy products which can be used in a variety of procedures, including discectomy, foraminoplasty and dorsal ramus rhizotomy. Small cannulas (7 mm in diameter) provide access for endoscopes with high resolution optics and a wide range of high-quality instruments including straight and articulating forceps, RF probes, and powered debriders and burrs.

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aprewett@replicationmedical.com
www.replicationmedical.com

204 Rose Micro Solutions
4105 Seneca Street
West Seneca, NY 14224
Phone: 716-608-0009 Fax: 716-608-0006

113 Safewire
8963 Sterling Rd Suite 7
Coppell, TX 75019
Phone: 972-587-8036 Fax: 974-286-9155

109 SI-BONE, INC
550 S Winchester Blvd Suite 620
San Jose, CA 95128
Fax: 408-587-8312

223 SIGNUS Medizintechnik GmbH
Industriebr 2
Alzenau, 63755
Phone: 49 602319166117 Fax: 49602319166171

413 Spinal Kinetics
595 N Pastoria Dr
Sunnyvale, CA 94085
Phone: 408-636-2500 Fax: 408-636-2599
Email: dbaedorf@spinalkinetics.com
www.spinalkinetics.com
Spinal Kinetics is a privately-held medical device company focused on developing innovative motion preservation systems for treating degenerative diseases of the spine. The M6-C cervical and M6-L lumbar are the only artificial discs that replicate the anatomic structure of a natural disc by incorporating an artificial nucleus and annulus.

315 Spinal Motion
201 San Antonio Circle Suite 115
Mountain View, CA 94040
Phone: 650-947-3472
Email: kwelch@spinalmotion.com
www.spinalmotion.com
SpinalMotion is focused exclusively on spinal disc arthroplasty, developing innovative technology designed to further enhance options for patients suffering from degenerative disc disease. SpinalMotion was founded in June 2003. The company is located in Mountain View, California. To learn more, please visit our website at www.spinalmotion.com.

208 Spineology Inc
7800 3rd Street North Suite 600
St Paul, MN 55128-5455
Phone: 651-256-8509 Fax: 651-256-8500
Email: sboeckman@spineology.com
www.spineology.com
Spineology's flagship product, OptiMesh, is a deployable polyester fabric mesh designed to contain granular bone graft. By combining granular graft with a porous conformable implant, the OptiMesh system provided a minimally invasive solution for deploying osteoinductive and osteoconductive graft materials into intimate contact with a prepared grafting site. Our Brands are: OptiMesh® Deployable Grafting System; ProMap™ EMG Navigation System; Capture™ Facet Fixation System; CapLOX™ Spinal System.

*Our new exhibitors are indicated in blue
Titan Spine, LLC is a privately-owned medical implant surface technology company in Mequon, Wisconsin that is focused on the design and manufacturing of proprietary interbody fusion devices for the spine. Founded in 2005, the company is committed to advancing the science of titanium surface engineering to enhance the treatment of various pathologies of the spine that require fusion.

AxiaLIF1L+/2L+ - Mini-open access and fusion system - Preserves the annulus and paraspinal soft tissue structures - Controlled distraction - Extensive Discectomy - Biomechanical stability - Low complication rates - High fusion rates VEO™ Lateral Access and Interbody Fusion System - Two stage lateral retraction system - Direct visualization of the psoas and associated nerves - Unobstructed fluoroscopic views - Muscle-splitting psoas retraction - Streamlined instrumentation - Comprehensive portfolio of implants

Vertebral Technologies, Inc. ("VTI") is a spinal device company that develops, manufactures and markets the InterFuse® Interbody Fusion System. The InterFuse® Interbody Fusion System enables surgeons to implant a larger size device in patients while allowing for a less invasive surgical approach. VTI is focusing its current commercialization efforts in the U.S. market, but has future plans to introduce its products in markets outside of the U.S.

Zimmer Spine develops, produces and markets high quality spine products and services that repair, replace and regenerate spine health. Zimmer constructs highly competitive fusion and non-fusion spine systems, instrumentation systems, cervical plates, allograft bone filler and Trabecular MetalTM Technologies. We value continuous surgeon education, building confidence and enhancing patient outcomes.
OLIF25™ Procedure
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Introducing the next evolution in lateral access

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THERE’S A NEW DYNAMIC FOR SPINAL SOLUTIONS

INTRODUCING DEPUY SYNTHES SPINE

When two of the world’s largest spine companies join forces, amazing things happen. As a combined organization, DePuy Synthes Spine is better equipped to help redefine complex and minimally invasive spine treatment.

What does “together” mean? It means we are inspired to better understand your needs and to reach new heights in innovation. It means offering a more comprehensive product portfolio of procedural solutions. It means delivering uninterrupted service and convincingly demonstrating clinical and economic value.

And at DePuy Synthes Spine, together means that with you, we will influence the way spinal solutions are developed and spinal care is delivered for years to come.

Together, we are inspired by you to advance the care of patients globally.

Visit us at EXHIBIT BOOTH #201 to learn more at:

INTERNATIONAL SOCIETY FOR THE ADVANCEMENT OF SPINE SURGERY

April 3-5, 2013 | Vancouver, BC Canada

Exhibit Hours:
Tuesday, April 2 5:00 pm - 7:00 pm | Opening Reception with Exhibits
Wednesday, April 3 10:30 am - 5:00 pm
Thursday, April 4 10:30 am - 5:00 pm
Friday, April 5 10:30 am - 12:00 pm
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Sacroiliac Joint Fixation Lunch Workshop

APRIL 3, 2013
12:00pm - 1:30pm
EM Room 2

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SINGLE-LEVEL L5-S1

CPT 22586*

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* For 2-level presacral interbody fusion (L4-5) use add-on code 0309T (in conjunction with 22586) for L4-L5. For more information please refer to the AMA CPT coding book.

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Post-Op CT Scan, AxiaLIF Plus 1-Level with Posterior Fixation
MAS® experience in complex procedures.

MAS® techniques for complex pathologies.

Lunch Workshop | Wednesday, April 3, 2013 | 12:00-1:30pm | Room 7

Spondylolisthesis: Juan Uribe, MD
Degenerative Scoliosis: Ivan Cheng, MD
Kyphosis, Sagittal Balance: Luiz Pimenta, MD
Tumor, Trauma: William Smith, MD

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Join us at our Industry Workshop featuring the NuNec® Cervical Arthroplasty System (Room #7) at 12:00 p.m. on Thursday, April 4th.
Faculty: Tai Friesem, MD

See us at Booth #418.

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Industry Workshops

**Wednesday Industry Workshops**
12:00pm - 1:30pm
*not CME/CE accredited

**GLOBUS MEDICAL**
Room: 9
SI Joint Fusion Workshop
Faculty: Louis H. Rappoport, MD

**NUVASIVE**
Room: 7
MAS Techniques for Complex Pathologies
Faculty: Ivan Cheng, MD
Vedat Deviren, MD
Luiz Pimenta, MD
William Smith, MD
Juan Uribe, MD

**MEDTRONIC**
Room: 8
Advances In Minimally Invasive Spine Surgery: Oblique Lateral Interbody Fusion (OLIF) and MAST Midline Lumbar Fusion (MIDLF) Procedure
Faculty: Peter Whang, MD

**PARADIGM SPINE**
Room: 9
coflex® Interlaminar Stabilization Workshop
Faculty: Reggie Davis, MD
Hallett Mathews, MD

**PIONEER**
Room: 7
NuNec® Cervical Arthroplasty System
Faculty: Tai Friesem

**Thursday Industry Workshops**
12:00pm - 1:30pm
*not CME/CE accredited

**MEDTRONIC**
Room: 8
New Surgical Technique for the BRYAN® Cervical Disc
Faculty: Rick Sasso, MD

**PIONEER**
Room: 7
NuNec® Cervical Arthroplasty System
Faculty: Tai Friesem
9:00am - 10:15am
ADVOCACY OF MIS

Room: East Ballroom B-C
Moderators: Choll Kim, MD and Frank Phillips, MD

9:00am - 9:05am
447
Minimally Invasive versus Open Transforaminal Lumbar Interbody Fusion (TLIF) for Degenerative Spondylolisthesis: Comparative Effectiveness and Cost-utility Analysis
S.L. Parker1, S. Godil1, S. Mendenhall1, D. Shau1, S. Zuckerman1, M.J. McGirt1
1Vanderbilt University Medical Center, Neurological Surgery, Nashville, TN, USA

9:06am - 9:11am
365
Comparison of Clinical Outcomes Following Treatment of Degenerative Disc Disease or Degenerative Spondylolisthesis with Minimally Invasive Lateral Interbody Fusion
K. Khajavi1,2, A.Y. Shen1,2, A. Hutchison1,2
1Georgia Spine and Neurosurgery Center, Atlanta, GA, USA, 2The INSPIRE Foundation, Atlanta, GA, USA

9:12am - 9:17am
223
A Comparison of the Complications between Minimally Invasive Transforaminal Lumbar Interbody Fusion and Traditional Posterior Lumbar Interbody Fusion
S. Xiao1
1301 Hospital, Orthopaedics, Beijing, China

9:18am - 9:23am
169
Comparison of Patient Functional Outcome and System Reimbursement for Lumbar Decompression via Standard Open versus Less Invasive Techniques
R.Q. Knight1, C. Goldberg1, C. Spivak1, P. Jenkins1, M. Scriban1, N. Krupa1
1Bassett Healthcare Network, Department of Surgery, Cooperstown, NY, USA

9:24am - 9:29am
21
X-Stop versus Decompressive Surgery for Lumbar Neurogenic Claudication - A Randomized Controlled Trial With Two-year Follow-up
B. Strömqvist1, S. Berg2, P. Gerdhem3, R. Johnsson1, A. Möller4, T. Sahlstrand5, A. Soliman6, T. Tullberg2
1Skåne University Hospital, Orthopedics, Lund, Sweden, 2Stockholm Spine Center, Upplands Väsby, Sweden, 3Karolinska Institute, Clinical Science, Stockholm, Sweden, 4Skåne University Hospital, Orthopedics, Malmö, Sweden, 5Tanta University, Neurosurgery, Tanta, Egypt

9:30am - 9:35am
DISCUSSION

9:36am - 9:41am
78
Clinical Outcome Following a Minimally Invasive Lumbar Decompression Technique for the Treatment of Lumbar Spinal Stenosis
M.S. Hisey1, C. Bonsignore2, W.D. Bradley1, S. Verma-Kurvari2, D.D. Ohmmeis2
1Texas Back Institute, Denton, TX, USA, 2Texas Back Institute Research Foundation, Plano, TX, USA

9:42am - 9:47am
402
Axial Presacral L4 to S1 Interbody Fusion Using AxiaLIF and Posterior Instrumentation. Clinical Outcomes
W.D. Tobler1,2, T.J. Raley3, N. Anand4, R.J. Nasca5, M.A. Melgar6
1University of Cincinnati, Neurosurgery, Cincinnati, OH, USA, 2Mayfield Clinic, Cincinnati, OH, USA, 3Advanced Spine and Pain, Arlington, VA, USA, 4Cedars Sinai Medical Center, Los Angeles, CA, USA, 5Orthopedic and Spine Surgery, Wilmington, NC, USA, 6Tulane University, Neurosurgery, New Orleans, LA, USA

9:48am - 9:53am
358
Medial-to-Lateral Trajectory Pedicle Screws (Cortical/ Pars Screws) – A Biomechanical Analysis Using a Novel Screw Design
G.S. Deol1, N. Khanna2, B.A. Heiges3, Z.A. Dooley4, A.W.L. Turner5
1University of North Carolina School of Medicine, Department of Orthopaedics, Raleigh, NC, USA, 2Indiana University School of Medicine, Department of Orthopaedic Surgery, Munster, IN, USA, 3Optim Orthopaedics, Savannah, GA, USA, 4NuVasive, Inc., San Diego, CA, USA

9:54am - 9:59am
267
Hospitalization Outcomes Associated with Minimally Invasive Surgery with Sextant vs Open Posterior/ Transforaminal Lumbar Interbody Fusion: A Retrospective Study
J.E. Kemner1, Z. Ihara1, M.J. Lage2
1Medtronic, Memphis, TN, USA, 2HealthMetrics Outcomes Research, Delray Beach, FL, USA

10:00am - 10:05am
62
Treatment of Osteolytic Vertebral Fractures due to Multiple Myeloma: Radiofrequency (RFK) Kyphoplasty vs Conservative Care
R. Pflegmacher1, R. Bomemann1, T.R. Jansen1, K. Kabir1, D.C. Wirtz1
1Universitätsklinikum Bonn, Bonn, Germany

10:06am - 10:15am
DISCUSSION
Wednesday | April 3rd

10:15am - 10:30am
ISASS BUSINESS MEETING
Room: East Ballroom B-C

10:30am - 11:00am
BREAK ON EXHIBIT FLOOR

11:00AM - 1:00PM
LUMBAR THERAPIES MOTION PRESERVATION
Room: East Ballroom B-C
Moderators: Gunnar Andersson, MD, PhD and Antonio Castellvi, MD

11:00am - 11:05am
76
Five-year Follow-up of a Prospective, Randomized FDA IDE Trial Comparing Two Lumbar Total Disc Replacements: Clinical Outcome and Serum Ion Level Analysis for a Metal-on-Metal Device
R.D. Guyer¹, K. Pettine², T. Dimmig³, D. Coric⁴, A. Cappuccino⁵, J. Roh¹
¹Texas Back Institute, Plano, TX, USA, ²Rocky Mountain Associates, Loveland, CO, USA, ³Triangle Orthopaedic Associates, Durham, NC, USA, ⁴Carolina Neurosurgery and Spine Associates, Charlotte, NC, USA, ⁵Buffalo Spine Surgery, Lockport, NY, USA, ⁶Orthopedics International Spine, Seattle, WA, USA

11:06am - 11:11am
412
Two-level Coflex® Interlaminar Stabilization Compared to Two-level Lumbar Spinal Fusion for the Treatment of Spinal Stenosis with Low-grade Spondylololisthesis
J.D. Auergabch¹, S. Leary², K. Kuwamura³, J. Field⁴
¹Bronx-Lebanon Hospital Center, Department of Orthopaedic Surgery, Bronx, NY, USA, ²Alvarado Hospital Medical Center, San Diego, CA, USA, ³South Texas Spine Clinic, San Antonio, TX, USA, ⁴Desert Institute for Spine Care, Phoenix, AZ, USA

11:12am - 11:17am
264
Clinical Outcomes for a Lumbar Viscoelastic Total Disc Replacement Compared to Stand-alone-ALIF
B. Rischke¹, V. Kammermeier², M. Runkel², R. Linovitz³, K. Zimmers³, E. Smith³
¹Spine-Center-Rischke, Center of Orthopaedic and Spine Surgery, Zurich, Switzerland, ²Konstanz Hospital, Konstanz, Germany, ³AxioMed Spine Corporation, Garfield Heights, OH, USA

11:18am - 11:23am
419
Facet Arthroplasty Utilizing the ACADIA® Facet Replacement System: Preliminary IDE Outcomes at Two and Three Years Postoperative
A.D. Tahernia¹, J.J. Regan², T. Briggs³, M.P. Lorio⁴, J. Youssef⁵, S. Webb⁶, D. Whiting⁶, K. Baker⁶, J. Myer⁶
¹Desert Orthopedic Center, Rancho Mirage, CA, USA, ²DISC, Beverly Hills, CA, USA, ³Springfield Neurological and Spine Institute, Springfield, MO, USA, ⁴Neuro-Spine Solutions, Bristol, TN, USA, ⁵Durango Orthopedic Associates/Spine Colorado, Durango, CO, USA, ⁶Florida Spine Institute, Clearwater, FL, USA, ⁷Allegheny General Hospital, Pittsburgh, PA, USA, ⁸Globus Medical, Inc., Audubon, PA, USA

11:24am - 11:29am
DISCUSSION

11:30am - 11:35am
101
Prospective, Randomized, Multicenter Study Comparing the Clinical Outcomes of Two Minimally Invasive Interspinous Devices for the Treatment of Lumbar Spinal Stenosis
W.D. Bradley¹, P.G. Whang²
¹Texas Back Institute, Denton, TX, USA, ²Yale Department of Orthopaedics and Rehabilitation, New Haven, CT, USA

11:36am - 11:41am
388
Results from a Multi-center Post-market Registry of the M6®-L Artificial Lumbar Disc
K. Ritter-Lang¹, C. Schätz², T. Biersted³, L. Nel³
¹Semper Mobilitas Orthopädie und Wirbelsäulenoperationen, Potsdam, Germany, ²Orthopädische Klinik Markgröningen, Markgröningen, Germany, ³Orthopädisch-Neurochirurgisches Zentrum, Recklinghausen, Germany, ⁴Nel Spinal Surgery, Pretoria, South Africa

11:42am - 11:47am
386
Lumbar Intrafacet Bone Dowel Fixation
D.J. Cook¹, M.S. Yeager², M.Y. Oh³, B.C. Cheng¹
¹Allegheny General Hospital, Neurosurgery, Pittsburgh, PA, USA

11:48am - 11:53am
279
Interbody Cages with Wide Contact Area in Lateral Interbody Fusion – Biomechanics, Clinical and Radiological Features
L. Pimenta¹, R. Jensen¹, L. Marchi¹, L. Oliveira¹, C. Castro¹, E. Coutinho², T. Coutinho², R. Amaral³
¹Instituto de Patologia da Coluna, São Paulo, Brazil, ²UCSD, Neurosurgery, San Diego, CA, USA

11:54am - 12:00pm
DISCUSSION

12:00pm - 1:30pm (non cme/ce)
INDUSTRY WORKSHOPS
Rooms: 7, 8, and 9
1:30pm - 2:30pm  
**SYMPOSIA**  
**VALUE IN SPINE CARE**  
Room: East Ballroom B-C  
Moderator: Frank Phillips, MD

**Tools for Assessing Value in Spinal Care**  
Frank Phillips, MD

**Defining Value in Medicine-Why it Matters?**  
Rick Guyer, MD

**Does Spinal Surgery Provide Value?**  
Paul Slosar, MD

**How does Industry Define Value?**  
Pat Miles

**Value in Spine: Who is Talking, Who is Listening?**  
Christopher Bono, MD

**DISCUSSION**

2:30pm - 3:30pm  
**BEST PAPERS - SESSION 1**  
Room: East Ballroom B-C  
Moderators: Jean Charles LeHuec, MD, PhD and Rudolf Bertagnoli, MD

2:30pm - 2:36pm  
**498**  
Resecting the Anterior Longitudinal Ligament Method during MIS Lateral Lumbar Interbody Fusion: Radiographic Analysis and Biomechanical Results Using an Integrated Spacer/Plate Interbody Reconstruction Device  
C. Kim1, B. Bucklen1, A. Muzumdar2, M. Moldavsky2, K. Raiszadeh1  
1Spine Institute of San Diego, San Diego, CA, USA, 2Globus Medical, Inc., Audubon, PA, USA

2:37pm - 12:16pm  
**100**  
Saphenous Nerve Somatosensory Evoked Potentials: Technique and Application for the Reduction of Femoral Nerve Injury during Lateral Access Surgery  
J.W. Silverstein1, L.E. Meremstein1,2  
1Spine Medical Services, Clinical Neurophysiology, Commack, NY, USA, 2Northshore LIJ Huntington Hospital, Neurosurgery, Huntington, NY, USA

3:05pm - 3:11pm  
**523**  
Long-term Evaluation of Re-operation Rates for Lumbar Total Disc Replacement and Fusion: Analysis of 1,237 Patients  
S.L. Blumenthal1, J.E. Zigler1, R.D. Guyer1, D.D. Ohnmeiss2  
1Texas Back Institute, Plano, TX, USA, 2Texas Back Institute Research Foundation, Plano, TX, USA

3:12pm - 3:18pm  
**299**  
7-year Reoperation Rates: Results of a Prospective, Randomized Clinical Trial: Cervical Total Disc Replacement vs. Fusion  
R.B. Delamarter1, J. Zigler2, D. Murrey3, M. Janssen4, J. Spivak5  
1Spine Center, Cedars Sinai Medical Center, Dept of Surgery, Los Angeles, CA, USA, 2Texas Back Institute Research Foundation, Plano, TX, USA, 3OrthoCarolina Spine Center, Charlotte, NC, USA, 4Spine Education and Research Institute, Denver, CO, USA, 5NYU/Hospital for Joint Disease, New York, NY, USA

3:19pm - 3:25pm  
**362**  
Predictors of Success after Cervical Disc Arthroplasty  
M.F. Gornet1, B.A. Taylor1, F.W. Schranck1, B. Kopjar2  
1The Orthopedic Center of Saint Louis, Spine Research Center, Saint Louis, MO, USA, 2University of Washington Seattle, Department of Health Services, Seattle, WA, USA

3:26pm - 3:30pm  
**DISCUSSION**

3:30pm - 4:00pm  
**BREAK ON EXHIBIT FLOOR**

Questions? (866) 423-9440 (U.S.) +1(630) 995-9994 (Int’l) 49
Wednesday | April 3rd

4:00pm - 5:00pm
CERVICAL MOTION PRESERVATION

Room: East Ballroom B-C
Moderators: Rick Sasso, MD

4:00pm - 4:05pm
293
Effects of Mobile Core Technology on Fixation of Cervical Disc Replacement: Results from a FDA Investigational Device Exemption Trial of Mobi-C® Cervical Artificial Disc
1University of California, Davis Medical School of Medicine, Neurological Surgery, Sacramento, CA, USA, 2LDR Spine USA, Inc, Austin, TX, USA, 3The Spine Institute, Santa Monica, CA, USA, 4Centre Hospitalier Universitaire Dijon le Bocage Central, Dijon, France, 5Clinique St Martin – Centre Aquitaine du Dos, Mérignac, France, 6Centre Hospitalier Régional Orléans, Orléans, France, 7Clinique du Millénaire, Montpellier, France, 8Retired, Nice, France, 9Clinique du Parc, ‘St Priest en Jarez, France, 10Clinique du dos AXIS, Hornu, Belgium, 11Texas Back Institute - Plano, Plano, TX, USA, 12Hôpitaux Universitaires de Strasbourg, Strasbourg, France, 13Centre Hospitalier Universitaire Bordeaux – Groupe Hospitalier Pellegrin, Bordeaux, France

4:06pm - 4:11pm
416
SECURE®-C Cervical Artificial Disc IDE Clinical Trial: Outcomes at Two and Five Years
W.J. Beutler1, W.C. Peppelman1, J. Marzluff2, C. Tomaras3, I. Volcan4, P. Asdourian5, K. Baker6, J. Myer6
1Pennsylvania Spine Institute, Harrisburg, PA, USA, 2Charlotte Brain and Spine, Charlotte, PA, USA, 3Peachtree Neurosurgery, Atlanta, GA, USA, 4West Augusta Spine Specialists, Augusta, GA, USA, 5Greater Chesapeake Orthopedic Associates, Baltimore, MD, USA, 6Globus Medical, Inc., Audubon, PA, USA

4:12pm - 4:17pm
141
Seven-year Results of the ProDisc-C Multi-center Randomized Clinical Trial
1Texas Back Institute, Plano, TX, USA, 2OrthoCarolina Spine Center, Charlotte, NC, USA, 3The Spine Institute at Saint John’s Health Center, Santa Monica, CA, USA, 4Hospital for Joint Diseases Spine Center, New York, NY, USA, 5Center for Spinal Disorders, Thornton, CO, USA

4:18pm - 4:23pm
272
Heterotopic Ossification Following Cervical Artificial Disc Replacement May Promote Adjacent Segment Degeneration: A Minimum 5-year Follow-up Result
Z. Feifei1, S. Yu1
1Peking University Third Hospital, Beijing, China

4:24pm - 4:29pm
296
Do Facets Govern Flexion-extension Motion Pattern in the Cervical Spine? Implications to Cervical Prosthesis Design
1Loyola University Chicago, Orthopaedic Surgery and Rehabilitation, Maywood, IL, USA, 2Edward Hines VA Hospital, Hines, IL, USA

4:30pm - 4:35pm
348
Sagittal Balance and Adjacent Segment Disease in the Cervical Spine
J. Belding1, A. Bowlka1, A. Youseff2, H. Bohlman1, J. Eubanks1
1University Hospitals of Cleveland, Orthopedics, Cleveland, OH, USA

4:36pm - 4:41pm
276
Restoration of Cervical Lordosis Is Associated with Improved Clinical Outcome in Anterior Cervical Discectomy and Fusion (ACDF) Patients
I.H. Lieberman1, X. Hu1
1Texas Back Institute, Texas Health Presbyterian Hospital Plano, Scoliosis and Spine Tumor Center, Plano, TX, USA

4:42pm - 4:47pm
335
The Kappa Line - A Predictor of Neurologic Outcome after Cervical Laminoplasty
1Asan Medical Center, University of Ulsan College of Medicine, Orthopedic Surgery, Seoul, Korea, Republic of, 2Seoul National University College of Medicine, Seoul, Korea, Republic of, 3Mount Sinai School of Medicine, Orthopaedics, New York, NY, USA

4:48pm - 4:53pm
519
In Vitro Biomechanics of Human Cadaveric Cervical Spines with Mature Fusion
L. Perez-Orribo1, S. Kalb1, N. Rodriguez-Martinez1, A.G.U.S. Newcomb1, P.M. Reyes1, N. Theodore1, N.R. Crawford1
1Barrow Neurological Institute, Spinal Biomechanics, Phoenix, AZ, USA

4:53pm - 5:00pm
DISCUSSION
**Wednesday | April 3rd**

**5:00PM - 6:00PM**
**ORAL POSTERS**

**CONCURRENT SESSION**

**CERVICAL**

**CERVICAL ARTHROPLASTY**

**DEFORMITY**

**LUMBAR**

**MIS**

**QUALITY OF SPINE**

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**CERVICAL**

Room: 1

Moderators:
Todd Allen, MD and Zvi Lidar, MD

5:00pm - 5:05pm

**432**

*Exploration of a CT-based Alternative to the Rule of Spence for Assessing Transverse Ligament Integrity*

L. Perez-Orizio¹, S. Kalb², D. Malhotra³, N. Rodriguez-Martinez⁴, N. Theodore¹, N.R. Crawford¹

¹Barrow Neurological Institute, Spinal Biomechanics, Phoenix, AZ, USA

5:06pm - 5:11pm

**263**

*Biomechanical Evaluation of a Selectively Constrained Cervical Disc Replacement*

B. Bucklen¹, T. Daftari¹, S.R. Chinthakunta³, K. Salloum², M. Moldavsky²

²Resurgens Orthopaedics Spine Center, Orthopaedics, Kennesaw, GA, USA, ³Globus Medical Inc, Research, Audbon, PA, USA

5:12pm - 5:17pm

**311**

*Transoral Atlantoaxial Reduction Plate Internal Fixation for the Treatment of Basilar Invagination Combined with C1-2 Dislocation*

X. Hong¹, Q.-S. Yin¹, F.-Z. Ai¹, M. Xiangyang¹, J.-H. Wang¹, Z. Wu¹, K. Zhang¹, J. Liu¹

¹Guangzhou Army General Hospital, Orthopeadics, Guangzhou, China

5:18pm - 5:23pm

**373**

*Adjacent Segment Disease and Cervical Fusion Methods*

V. Agarwal¹, S. Sarafini¹, K. Knott¹, M. Haglund¹

¹Duke University, Neurosurgery, Durham, NC, USA

5:24pm - 5:29pm

**342**

*The Fate of Hinge Fracture Following Cervical Open Door Laminoplasty*

D.-H. Lee¹, H. Kim², H.S. Lee³, H. Noh¹, J.J. Yang³, C. Hwang³, S.K. Cho³

¹Asan Medical Center, University of Ulsan, Orthopedic Surgery, Seoul, Korea, Republic of, ²Seoul National University College of Medicine, Orthopedic Surgery, Seoul, Korea, Republic of, ³Dongguk University Ilsan Hospital, Orthopedic Surgery, Ilsan, Korea, Republic of

5:30pm - 5:35pm

**170**

*Two-year Patient Outcomes after Single vs. Multi-level Cervical Disc Arthroplasty*

M.F. Gornet¹, F.W. Schrann², B.A. Taylor³, B. Kopjar²

¹The Orthopedic Center of Saint Louis, Spine Research Center, Saint Louis, MO, USA, ²University of Washington Seattle, Department of Health Services, Seattle, WA, USA

5:36pm - 5:41pm

**464**

*Anatomic Feasibility of C2 Pedicle Screw Fixation: The Effect of Variable Angle Interpolation of Axial CT Scans*

J.R. O’Brien¹, L. Burke¹, A. Ho¹, T. Wagner¹, W.D. Yu¹

¹George Washington University, Department of Orthopedic Surgery, Washington, DC, USA

5:42pm - 5:47pm

**341**

*Adjacent Level Radiographic Degenerative Changes Following Single Level Artificial Disc Replacement or ACDF at 5-7 Year Follow-up*

J.M. Spivak¹, R.B. Delamarter¹, D.B. Murrey¹, J.E. Zigler¹, M. Janssen², J.A. Goldstein¹

¹New York University Hospital for Joint Diseases, New York, NY, USA, ²Cedars-Sinai Spine Center, Santa Monica, CA, USA, ³OrthoCarolina Spine Center, Charlotte, NC, USA, ⁴Texas Back Institute, Plano, TX, USA, ⁵Center for Spinal Disorders, Denver, CO, USA

5:48pm - 5:53pm

**297**

*Radiofrequency Thermocoagulation in the Management of Cervicogenic Headache*

E.E. Emara¹, M. Alsayed³, N. Fahmy³

¹Ain Shams University Faculty of Medicine, Neurosurgery Department, Cairo, Egypt, ²Ain Shams University Faculty of Medicine, Psychiatry Department, Cairo, Egypt, ³Ain Shams University Faculty of Medicine, Neurology Department, Cairo, Egypt

5:53pm - 6:00pm

**354**

*Lateral Mass Screw Fixation in the Cervical Spine: A Systematic Review*

J.D. Coe¹, A.R. Vaccaro⁴, A.T. Dailey¹, R.L. Skolsky¹, R. Sasso⁵, S.C. Ludwig⁶, E. Brodt¹, J.R. Detori²

¹Silicon Valley Spine Institute, Campbell, CA, USA, ²The Rothman Institute, Philadelphia, PA, USA, ³University of Utah, Salt Lake City, UT, USA, ⁴Johns Hopkins University, Baltimore, MD, USA, ⁵Indiana Spine Group, Carmel, IN, USA, ⁶University of Maryland, Baltimore, MD, USA

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**DISCUSSION**

**CERVICAL ARTHROPLASTY**

Room: 5

Moderator: Neel Anand, MD

Jeffrey Goldstein, MD

5:00pm - 5:05pm

**370**

*Global Cervical Sagittal Alignment, Balance and Segmental Contribution: Radiographic Outcomes of One and Two Level Disc Replacement with NuNec and Prestige LP Implants*

R.P. Jeavons¹, A.J. Berg², C. D. Jensen¹, G. Reddy¹, T. Friesem¹

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

Questions? (866) 423-9440 (U.S.) +1(630) 995-9994 (Int’l)
Wednesday | April 3rd

5:06pm - 5:11pm

142

Randomized Controlled Trial Comparing Prestige and Nunec Cervical Disc Arthroplasty
P. Karpe1, B. Purushothaman1, A. Berg2, G. Reddy1, C. Bhatia1, T. Friesem3
1North Tees and Hartlepool NHS Trust, Orthopaedics, Stockton, United Kingdom

5:12m - 5:17pm

215

Prospective Clinical Results of 1 Level Cervical Arthroplasty with the Prestige Device: Four Year Results
A.P. Fabrizi1,2, L. Schiabello1,2
1Villa Maria Pia Hospital, Neurosurgery, Turin, Italy, 2San Pier Damiano Hospital, Neurosurgery, Faenza, Italy

5:18pm - 5:23pm

116

Clinical Risk Factors of Heterotopic Ossification Following Cervical Total Disc Replacement: Five-year Clinical and Radiological Follow-up Results
Z. Feifei1, S. Yu1
1Peking University 3rd Hospital, Orthopaedics, Beijing, China

5:24pm - 5:29pm

298

Biomechanical Testing of the Mobi-C® Cervical Artificial Disc
1Cedars-Sinai Spine Center, Department of Surgery, Div of Orthopaedics, Los Angeles, CA, USA, 2Centre Hospitalier Universitaire Dijon Le Bocage Central, Dijon, France, 3Clinique St Martin – Centre Aquitain du dos, Merignac, France, 4Centre Hospitalier Régional Orléans, Orleans, France, 5Clinique de Millénaire, Montpellier, France, 6Private, Nice, France, 7Clinique du Parc, St Priest en Jarez, France, 8Clinique du Dos AXIS, Honu, Belgium, 9University of California, Davis, Sacramento, CA, USA, 10Texas Back Institute, Plano, TX, USA, 11Hôpitaux Universitaires de Strasbourg, Strasbourg, France, 12Centre Hospitalier Universitaire Bordeaux – Groupe Hospitalier Pellegrin, Bordeaux, France

5:30pm - 5:35pm

537

ProDisc®-C Nova total disc replacement – 2 year follow up
R. Bertagnoli1
1ProSpine, Straubing Bogen, Germany

5:36pm - 5:41pm

385

Clinical Outcomes for a Novel Compressible Core Cervical Total Disc Replacement: 3.5 Year Follow-up C. Laurysen1, D. Coric2, T.A. Dimmig2
1Institute of Advanced Spinal Research of California/Tower Orthopaedics, Beverly Hills, CA, USA, 2Carolina Neurosurgery and Spine Associates, Charlotte, NC, USA, 3Triangle Orthopaedic Associates, Durham, NC, USA

5:42pm - 5:47pm

112

M. Pelton1, S.J. Fineberg1, M. Oglesby1, K. Singh1, A. Patel2
1Rush University Medical Center, Orthopaedic Surgery, Chicago, IL, USA, 2Northwestern University Feinberg School of Medicine, Orthopaedic Surgery, Chicago, IL, USA

5:48pm - 5:53pm

389

Does Preservation of Motion in the Cervical Spine after Treatment with the SECURE-C Artificial Disc Result in Fewer Subsequent Surgical Interventions? J. McConnell1, W.J. Beutler2, W.C. Peppelman2, J. Marzluff4, J. Highsmith1, J. Lindley1, K. Baker2, J. Myers2
1OAA Orthopaedic Specialists, Allentown, PA, USA, 2Pennsylvania Spine Institute, Harrisburg, PA, USA, 3Charleston Brain and Spine, Charleston, PA, USA, 4Neurological Institute of Savannah, Savannah, PA, USA, 5Globus Medical, Inc., Audubon, PA, USA, 6Globus Medical, Inc., Clinical Affairs, Audubon, PA, USA

DISCUSSION

DEFORMITY

Room: 3

Moderators:
Isador Lieberman, MD MBA FRCSC and Gilad Regev, MD

5:00pm - 5:05pm

268

Biomechanical Assessment of Anterior Thoracolumbar Instrumentation: A Comparison between a Low Profile Dual Rod System and a Dual Rod System
M. Gehren1, S.K. Hegde2, M. Moldavsky1, S.R. Chinthakunta4, M. Gudipalli3, K. Salloum3, B. Bucklen1, S. Khalil4
1Rigshospitalet, National University Hospital of Copenhagen, Copenhagen, Denmark, 2Apollo Hospitals, Chennai, India, 3Globus Medical, Research, Audubon, PA, USA, 4Globus Medical, Audubon, PA, USA

5:06pm - 5:11pm

503

Use of Expandable Interbody Spacer for MIS TLIF: Preliminary Radiographic Results of Lordosis Correction at L5-S1
J.A. Sclafani1, H. Kang2, C.W. Kim1
1Spine Institute of San Diego, Center for Minimally Invasive Spine Surgery, San Diego, CA, USA, 2New York University, New York, NY, USA

5:12pm - 5:17m

242

Pulmonary Function Following Adult Spinal Deformity Surgery: Minimum Two Year Follow-up R.A. Lehman1, D.G. Kang2, L.G. Lenke2, J.J. Stallbaumer3, B.A. Sides1, J. Cody1, R. Tracey1
1Walter Reed National Military Medical Center, Orthopaedic Surgery, Bethesda, MD, USA, 2Washington University School of Medicine, Orthopaedic Surgery, St Louis, MO, USA

5:18pm - 5:23pm

364

Prediction of Changes in Biomechanical Behavior of the Lumbar Spine Following Alteration of Lordotic Angles Due to Cage Insertion
K.M. Park1, S.U. Kuhn2, K.Y. Lee2, S.J. Lee3
1Inje University, Gimhae, Korea, Republic of, 2Gangnam Severance Spine Hospital, Seoul, Korea, Republic of, 3Sejong University, Seoul, Korea, Republic of

52 ISASS13 Annual Meeting
LUMBAR
Room: 4
Moderators: Rolando Garcia, MD and Peter Whang, MD

5:00pm - 5:05pm
369
Evaluating the Need for Non-randomized Training Cases: Experience from Patients Treated with the Investigational ACADIA® Device in a Clinical Trial
1Durango Orthopedic Associates/Spine Colorado, Durango, CO, USA, 2DISC, Beverly Hills, CA, USA, 3Springfield Neurological and Spine Institute, Springfield, MO, USA, 4Neuro-Spine Solutions, Bristol, TN, USA, 5Desert Orthopedic Center, Rancho Mirage, CA, USA, 6Allegheny General Hospital, Pittsburgh, PA, USA, 7Florida Spine Institute, Clearwater, FL, USA, 8Globus Medical, Inc., Audubon, PA, USA, 9Globus Medical, Inc., Clinical Affairs, Audubon, PA, USA

5:06pm - 5:11pm
359
Biomechanics of a New Dynamic Lumbar Posterior Stabilizer
J.F. Zucherman1, K. Hsu1, L. Perez-Orribo2, P.M. Reyes3, N.R. Crawford4
1St. Mary’s Spine Center, San Francisco, CA, USA, 2Barrow Neurological Institute, Spine Biomechanics, Phoenix, AZ, USA

5:12pm - 5:17pm
444
Freedom Disc vs. ProDisc-L for Treatment of 1-level Lumbar Disc Disease: Results from One Investigative Site of the USA FDA Randomized Clinical Trial
H. Bedi1, M. Kropf1, L.E.A. Kanim1, J. Kim2, B. Hyun1, A. Rasoulif1, R.B. Delamarter1
1Spine Center, Cedars-Sinai Medical Center, Department of Surgery, Los Angeles, CA, USA

5:18pm - 5:23pm
309
Shear Loading Response of XLIF Supplemental Fixation in a Cadaveric Spondylolisthesis Model
G.R. Fogel1, A.W.L. Turner2, Z.A. Dooley2, G.B. Cornwall2
1Spinepainbogone, San Antonio, TX, USA, 2NuVasive, Inc., Biomechanics, San Diego, CA, USA

5:24pm - 5:29pm
294
Decreased Bacterial Biofilm Formation and Function Associated with Silicon Nitride (Si3N4) Materials Used in Interbody Fusion Cages (IBF) Compared to Titanium and Polyetheretherketone (PEEK)
D. Gorth1, S. Puckett2, B. Ercan1, T.J. Webster1, A.A. Patel2, R. Lakshminarayanan3, J.A. Yousef4, D. Orndorff4
1Brown University, School of Engineering and Department of Orthopaedics, Providence, RI, USA, 2Loyola University School of Medicine, Chicago, IL, USA, 3Amedica Corporation, Salt Lake City, UT, USA, 4Durango Orthopedic Associates/Spine Colorado, Durango, CO, USA

Questions? (866) 423-9440 (U.S.) +1(630) 995-9994 (Int’l)
Wednesday | April 3rd

5:30pm - 5:35pm
157
Radiologic Results of Total Disc Replacement in Lumbar Spine: Experience of Single Institute with Minimum 5-year Follow up
J.-W. Hur¹, C.-K. Park¹, K.-S. Ryu¹, J.-S. Kim¹, M.-H. Shin¹
¹Seoul St. Mary’s Hospital, Neurosurgery, Spine Center, Seoul, Korea, Republic of

5:36pm - 5:41pm
332
Single Level Posterior Lumbar Fusion and Decompression for Degenerative Spondylolisthesis-comparison between Pedicle Screws and Spinous Process Fixation - Up to Two Year Follow-up
R. Tatsumi¹
¹Northwest Spine Foundation, Tualatin, OR, USA

5:42pm - 5:47pm
232
Would Resting a Lateral Interbody Cage Across the Ring Apophysis in the Lumbar Spine Mitigate Endplate Violation?
J.M. Zavitsky², H. Serhan², A.K. Agarwal², M.K. Kodigudla², A. Agarwal³, V.P. Goel³
²Ochsner Medical Center, Department of Orthopaedic Surgery, New Orleans, LA, USA, ³DePuy Synthes Spine, Raynham, MA, USA, ³University of Toledo, Departments of Bioengineering and Orthopaedic Surgery, Toledo, OH, USA

5:48pm - 5:53pm
472
Comparison of Fusion Rates of Anterior and Posterior Fusion, Using FRA Supplemented with Posterior Pedicle Screw Instrumentation, with and without rhBMP-2 with a Minimum of 2 Year Follow-up
R. Rabbani¹, J.G. Bendetson¹, G. Tepper¹
¹Miracle Mile Medical Center, Los Angeles, CA, USA

5:53pm - 6:00pm
DISCUSSION

MIS
Room:  2
Moderators:  Christopher Yeung, MD and John O’Toole, MD

5:06pm - 5:11pm
482
Biomechanical Evaluation of a Unilateral, Minimally Invasive Approach for Decompression in the Lumbar Spine: A Cadaver Study
Z.A. Smith¹, G. Vastaris², G. Carandang², R.M. Havey³, S. Hannon³, L. Voronov³, A. Patwardhan³, R.G. Fessler³
¹Northwestern University, Neurological Surgery, Chicago, IL, USA, ²Loyola University Chicago, Edward Hines, Jr.; Veteran’s Hospital, Hines, IL, USA

5:12 - 5:17pm
287
Sagittal Alignment Correction Following Minimally Invasive Lateral Fusion with Hyperlordotic Cages
L. Pimenta¹, R. Jensen¹, L. Marchi¹, L. Oliveira¹, C. Castro¹, E. Coutinho¹, T. Coutinho¹, R. Amaral¹
¹Instituto de Patologia da Coluna, São Paulo, Brazil, ²UCSD, Neurosurgery, San Diego, CA, USA

5:18pm - 5:23pm
36
Reduction of Moderate to High Grade Spondylolisthesis after Circumferential Releasing Technique under the Mini-open Posterior Lumbar Interbody Fusion
H.S. Kim¹, S.J. Jeong¹, H.J. Ahn¹, K.H. Jeon¹, W.J. Choi¹, K.T. Kim¹, C.I. Ju², S.W. Kim², S.M. Lee², H. Shin², HSSH & CUMC¹
¹Hurisarang Spine Hospital, Department of Neurosurgery, Daejeon, Korea, Republic of, ²College of Medicine, Chosun University, Department of Neurosurgery, Gwangju, Korea, Republic of

5:24pm - 5:29pm
52
Minimally Invasive Surgery for Lumbar Spinal Stenosis - Modified Marmot Operation versus Spinous Process Transverse Cutting Laminectomy
M. Kawakami¹, S.-I. Nakao¹, E. Miyamoto¹, Y. Kinoshita¹, D. Fukui¹, T. Matsuoka¹
¹Wakayama Medical University Kihoku Hospital, Spine Care Center, Ito Gun, Japan, ²Wakayama Rosai Hospital, Orthopaedic Surgery, Wakayama, Japan

5:30pm - 5:35pm
198
An Ipsilateral Bi-portal Arthroscopic Trans-iliac Approach to L5-S1 Disc and Foramen. A Cadaver Study
S.G. Osman¹
¹American Spine Center, Frederick, MD, USA

5:36pm - 6:00pm
DISCUSSION
5:42pm - 5:47pm

526

Interim Study Results of a Flexible Microblade Shaver System for Lumbar Decompression
L. Dickinson1, C. Summa2, R. Mimran3, C. Lauryssen4
1Pacific Brain & Spine Medical Group, Inc., Castro Valley, CA, USA, 2Spine Clinic of Monterey Bay, Soquel, CA, USA, 3Tower Orthopaedics and Neurological Spine Institute, Beverly Hills, CA, USA

5:48pm - 5:53pm

420

Complications with rhBMP-2 in Lateral Approach Spine Surgery
W.D. Smith1, C.R. Brown2, L. Pimenta3, L. Marchi3, J.S. Uribe4
1University Medical Center of Southern Nevada, Neurosurgery, Las Vegas, NV, USA, 2Duke University Medical Center, Department of Orthopaedic Surgery, Durham, NC, USA, 3Instituto de Patologia da Coluna, Sao Paulo, Brazil, 4University of South Florida, Department of Neurosurgery and Brain Repair, Tampa, FL, USA

DISCUSSION

QUALITY OF SPINE

Room: 6
Moderators: Scott Blumenthal, MD and Yu-Po Lee, MD

5:00pm - 5:05pm

494

Osteoporotic Thoracolumbar Vertebral Fractures. Long Term Comparison between Conservative Treatment and Percutaneous Vertebroplasty
K. Martikos1, F. Lolli1, F. Vommaro1, M. Di Silvestre1, T. Greggi1
1Rizzoli Orthopaedic Institute, Spine Surgery Department, Bologna, Italy

5:06pm - 5:11pm

450

A Systematic Literature Review of Clinical Outcomes Following Fusion Surgery for Discogenic Low Back Pain
F.M. Phillips1, P. Slosar2, J. Youssef3, G. Andersson1
1Rush University Medical Center, Orthopaedic Surgery, Chicago, IL, USA, 2SpineCare Medical Group/San Francisco Spine Institute, San Francisco, CA, USA, 3Duranro Orthopedic Associates/Spine Colorado, Durango, CO, USA

5:12pm - 5:17pm

440

Comparative Effectiveness and Cost-utility of a Novel Annular Closure Device for Prevention of Recurrent Disc Herniation Following Lumbar Discectomy: A Prospective Cohort Study
S.L. Parker1, G. Grahovac2, D. Vukas3, D. Ledic2, M. Vilendecic2, M.J. McGirt1
1Vanderbilt University Medical Center, Neurological Surgery, Nashville, TN, USA, 2University Hospital, Neurological Surgery, Dubrava, Croatia, 3University Hospital, Neurological Surgery, Rijeka, Croatia

Wednesday | April 3rd

5:18pm - 5:23pm

89

Factors Affecting Length of Stay Following Elective Posterior Lumbar Fusion: A Multivariable Analysis
J.A. Gruskay1, M. Fu1, D.D. Bohi3, M.L. Webb1, J.N. Grauer1
1Yale University School of Medicine, Department of Orthopedics and Rehabilitation, New Haven, CT, USA

5:24pm - 5:29pm

192

Retrograde Ejaculation in Anterior Lumbar Surgery with use of rhBMP-2
S.A. Brau1
1Spine Access Surgery Associates, Los Angeles, CA, USA

5:30pm - 5:35pm

429

Epidemiological Trends in Cervical Spine Surgery between 2002-2009
M. Pelton1, S.J. Fineberg1, M. Oglesby1, K. Singh1, A. Patel2
1Rush University Medical Center, Orthopaedic Surgery, Chicago, IL, USA, 2Northwestern University Feinberg School of Medicine, Orthopaedic Surgery, Chicago, IL, USA

5:36pm - 5:41pm

420

The National Burden of Revision Spinal Fusion: A Focus on Patient Characteristics and Complications
S. Rajaei1, H.W. Bae2, L.E. Kanim2
1Tufts University School of Medicine, Boston, MA, USA, 2Northwestern University Feinberg School of Medicine, Orthopaedic Surgery, Chicago, IL, USA

5:42pm - 5:47pm

118

Incidence and Mortality of Thromboembolic Events after Lumbar Spine Surgery
M. Pelton1, S.J. Fineberg1, M. Oglesby1, K. Singh1, A. Patel2
1Rush University Medical Center, Orthopaedic Surgery, Chicago, IL, USA, 2Northwestern University Feinberg School of Medicine, Orthopaedic Surgery, Chicago, IL, USA

5:48pm - 5:53pm

417

MIS Lumbar Fusion in an Ambulatory Surgery Center (ASC): Safety, Treatment Outcomes, and Comparison with Inpatient Lumbar Fusion
W.D. Smith1,2, G.M. Christian1
1Western Regional Center for Brain & Spine Surgery, Neurosurgery, Las Vegas, NV, USA, 2University Medical Center of Southern Nevada, Neurosurgery, Las Vegas, NV, USA

DISCUSSION
8:00AM - 8:30AM
QUALITY OF SPINE
Room: East Ballroom B-C
Moderator: Hansen Yuan, MD

8:00am - 8:05am
75
The Fate of Prospective Spine Studies Posted on
ClinicalTrials.gov
D.D. Ohnmeiss
1Texas Back Institute Research Foundation, Plano, TX, USA

8:06am - 8:11am
79
Implementation and Impact of Pre-operative Peer
Case Review in a Spine Practice
R.D. Guyer1, J. Shivers1, D.D. Ohnmeiss2, J.E. Zigler1
1Texas Back Institute, Plano, TX, USA, 2Texas Back Institute
Research Foundation, Plano, TX, USA

8:12am - 8:17am
130
Discrepancies in Spine Surgeon Conflict-of-
Interest Disclosures between a National Meeting
and Physician Payment Listings on a Device
Manufacturer Website
R.A. Buerba1, M. Fu1, J.N. Grauer1
1Yale University School of Medicine, Orthopaedics and
Rehabilitation, New Haven, CT, USA

8:18am - 8:30am
DISCUSSION

10:10AM - 10:40AM
BREAK ON EXHIBIT FLOOR

10:40AM - 12:00PM
BEST PAPERS - SESSION 2
Room: East Ballroom B-C
Moderators: Karin Büttner-Janz, MD, PhD and
Tom Errico, MD

10:40am - 10:46am
47
The Impact of Different Health Dimensions on Overall
Quality of Life related to Kyphoplasty and Non-
surgical Management
D. Wardlaw
1NHs Grampian, Orthopaedics, Stonehaven, United Kingdom

10:47am - 10:53am
128
Comparison of Vertebroplasty, Kyphoplasty and
Nonsurgical Management of Vertebral Compression
Fractures (VCF) and Impact on U.S. Healthcare
Resource Utilization
M.A. Hazzard1, S.P. Ladi1, R. Babu1, R.E. Isaacs1, B.
Ugliwnieza2, M. Boakye2, J.N. Grauer1, C.G. Patil1
1Duke University, Division of Neurosurgery, Durham, NC,
USA, 2University of Louisville, Department of Neurosurgery,
Louisville, KY, USA, 3Cedars Sinai Medical Center, Department
of Neurosurgery, West Hollywood, CA, USA

10:54am - 11:00am
431
Effectiveness and Cost per Quality Adjusted Life
Year (QALY) Gained from Comprehensive Medical
Management of Lumbar Spondylosis
S.L. Parker1, S. Godil1, S. Mendenhall1, S. Zuckerman1, D.
Shau1, M.J. McGirt1
1Vanderbilt University Medical Center, Neurological Surgery,
Nashville, TN, USA

11:01am - 11:07am
367
Retention of Key Portions of Informed Consent in
the Adult Deformity Patient; Interim Report of a
Prospective Study
A.J. Clark1, J.K. Scheer1, C.I. Shaffrey2, J.S. Smith2, S. Bess3, P.V.
Mummaneni2, I. McCarthy1, R. Hart1, M.F. O’Brien1, R.A. Hostin1, K.M.
Kebaish2, E.O. Klineberg2, M. Gupta3, C.M. Li3, V. Lafage4, V. Deviren5,6,
F. Schwab5, C.P. Ames1, International Spine Study Group
1UCSF, Neurosurgery, San Francisco, CA, USA, 2University of Virginia,
Neurosurgery, Charlottesville, VA, USA, 3Rocky Mountain Hospital for
Children, Orthopaedic Surgery, Denver, CO, USA, 4Baylor Health Care
System, Institute for Health Care Research and Improvement, Houston,
TX, USA, 5Oregon Health and Science University, Orthopaedic Surgery,
Portland, OR, USA, 6Baylor Scott and White, Orthopaedic Surgery,
Houston, TX, USA, 7Johns Hopkins University, Orthopaedic Surgery,
Baltimore, MD, USA, 8University of California, Davis, Orthopaedic
Surgery, Sacramento, CA, USA, 9NYU Hospital for Joint Diseases
Spine Center, Orthopaedic Surgery, New York, NY, USA, 10UCSF,
Orthopaedic Surgery, San Francisco, CA, USA

11:08am - 11:18am
DISCUSSION
Eliminating Tumour Cells from the Cell Saver (CS) in Metastatic Spine Tumour Surgery Using a Leucocyte Depletion Filter (LDF): Dispelling an Old Myth
Y. Chen¹, N.S. Kumar¹, Q. Ahmed², V. Lee², R.W.M. Lam¹, H.K. Wong¹
¹National University Health System, Department of Orthopaedic Surgery, Singapore, Singapore, ²National University Health System, Department of Pathology, Singapore, Singapore

Predictors of Failure of Nonoperative Management of Spinal Epidural Abscesses
M.B. Harris¹, S.D. Kim²
¹Brigham and Women’s Hospital, Harvard Medical School, Orthopaedic Surgery, Boston, MA, USA, ²Washington University Medical School, Orthopedic Surgery, St Louis, MO, USA

Timing of Tracheostomy after Anterior Cervical Discectomy and Fusion
J.H. Bagley¹, T.R. Owens¹, M.A. Hazzard¹, R. Babu¹, K. Huang¹, R.E. Isaacs¹, C.A. Bagley¹
¹Duke University Medical Center, Durham, NC, USA

The Potential for Bone Marrow Mesenchymal Stem Cells Slowing Nucleus Pulposus Cells Degeneration through NF-kB Pathway
J. Zou¹
¹The First Affiliated Hospital of Soochow University, Suzhou, China

Comparison of Adjacent Segment Degeneration Five Years After Single-level Cervical Fusion and Cervical Arthroplasty: A Retrospective Controlled Study
Z. Yanbin¹, S. Yu¹
¹Peking University Third Hospital, Beijing, China

Comparison of the Clinical and Radiographic Results of ACDF: Six-year MRI Follow-up Study
W. Tian¹, K. Yan¹, X. Han¹, J. Yu¹, P. Jin¹, J. Yu, PH. Jin¹
¹Beijing Jishuitan Hospital, Department of Spine Surgery, Beijing, China

Biomechanics of Lumbar Instability
Lisa Ferrara, PhD
Disc Regeneration, Including Stem Cells
Howard An, MD
New Imaging Technologies: Are They Helpful?
Jeffrey Lotz, PhD

2:30PM - 3:00PM
CERVICAL - CLINICAL OUTCOMES
Room: East Ballroom B-C
Moderators: Michael Ogon, MD and James Yue, MD

Comparison of Adjacent Segment Degeneration Five Years After Single-level Cervical Fusion and Cervical Arthroplasty: A Retrospective Controlled Study
Z. Yanbin¹, S. Yu¹
¹Peking University Third Hospital, Beijing, China

Cervical Posterior Foraminotomy’s Effect on Segmental Range of Motion in the Setting of Total Disc Arthroplasty
R.W. Tracey¹, A.J. Bevevino¹, R.A. Lehman¹, D.G. Kang¹, D. Ambati¹, R. Gaume¹, D.E. Gwinn¹, A.E. Dmitriev¹
¹Walter Reed National Military Medical Center, Orthopaedic Surgery, Bethesda, MD, USA

Comparison of the Clinical and Radiographic Results of ACDF: Six-year MRI Follow-up Study
W. Tian¹, K. Yan¹, X. Han¹, J. Yu¹, P. Jin¹, J. Yu, PH. Jin¹
¹Beijing Jishuitan Hospital, Department of Spine Surgery, Beijing, China

Questions? (866) 423-9440 (U.S.) +1(630) 995-9994 (Int’l)
Thursday | April 4th

3:00pm - 3:30pm
TRANSFER OF PRESIDENCY/ AWARDS
Room: East Ballroom B-C

3:30pm - 4:00pm
BREAK ON EXHIBIT FLOOR

4:00pm - 5:00pm
LUMBAR - COST EFFECTIVENESS
CLINICAL OUTCOMES
Room: East Ballroom B-C
Moderators: Yu-Po Lee, MD and
Gilad Regev, MD

4:00pm - 4:05pm
446
Determining the Quality and Effectiveness of Surgical Spine Care: Patient Satisfaction Is Not a Valid Proxy
S.L. Parker1, S. Godil1, M.J. McGirt1
1Vanderbilt University Medical Center, Neurological Surgery, Nashville, TN, USA

4:06pm - 4:11pm
439
The National Neurosurgery Quality and Outcomes Database (N2QOD): General Overview and Initial Results of the Pilot Year
C. Watridge4, M.J. McGirt5, T. Speroff6, S. Glassman7, J. Knightly8, P. Mummmaneni9, G. Oetting10, N. Theodore11, O. Gottfried12, S. Khair9, S. Kalkanis15, T. Ryken11, D. Fasset2, G. Baillurshot13, R. Reeder14, C. Miller14, T. Briggs14, T. Grahm14, B. Guthrie14, J. Harrington15, C. Shaffrey16, E. Elowitz17, K. Foley17, F. Harrell18, R. Dittus19, A.L. Asher23, 1University of Tennessee, Department of Neurosurgery, Memphis, TN, USA, 2Vanderbilt University Medical Center, Neurological Surgery, Nashville, TN, USA, 3Norton Healthcare, Louisville, KY, USA, 4Atlantic Neurosurgical Specialists, Morristown, NJ, USA, 5UCSF, San Francisco, CA, USA, 6Augusta Back, Augusta, GA, USA, 7Barrow Neurological Institute, Phoenix, AZ, USA, 8Duke University, Durham, NC, USA, 9Goodman Campbell, Indianapolis, IN, USA, 10Henry Ford, West Bloomfield, MI, USA, 11University of Iowa, Waterloo, IA, USA, 12University of Illinois, Peoria, IL, USA, 13Central Ohio Neurological, Westerville, OH, USA, 14Mercy Medical Center, North Sioux City, SD, USA, 15Coastal New Hampshire, Portsmouth, NH, USA, 16Springfield Neurological and Spine Institute, Springfield, MO, USA, 17Tyler Neurological Associates, Tyler, TX, USA, 18University of Alabama, Birmingham, AL, USA, 19University of New Mexico, Albuquerque, NM, USA, 20University of Virginia, Charlottesville, VA, USA, 21Weill Cornell Spine Center, New York, NY, USA, 22Semmes-Murphy Neurological and Spine Institute, Memphis, TN, USA, 23Carolina Neurosurgery and Spine Associates, Charlotte, NC, USA

4:12pm - 4:17pm
77
Relationship of Workers Compensation Status, Psychological Profiles, and Clinical Outcome: Results of a Prospective, Multicenter Study
A. Block1, Y. Ben-Porath2, R. Marek3, D.D. Ohnmeiss2, R.D. Guyer1
1Texas Back Institute, Plano, TX, USA, 2Kent State University, Kent, OH, USA, 3Texas Back Institute Research Foundation, Plano, TX, USA

4:18pm - 4:23pm
433
Should Patients Lose Weight before Surgery? The Effect of Obesity on Outcomes after Long Instrumented Spinal Arthrodesis
J.T. Nelson1, D. Crandall2,3, J. Revella1
1Sonoran Spine Research and Education Foundation, Mesa, AZ, USA, 2Sonoran Spine Center, Mesa, AZ, USA, 3Banner Samaritan Orthopaedic Residency Program, Phoenix, AZ, USA

4:24pm - 4:29pm
DISCUSSION

4:30pm - 4:35pm
513
4Sonoran Spine Center, Mesa, AZ, USA, 5Sonoran Spine Research and Education Foundation, Phoenix, AZ, USA, 6Banner Samaritan Orthopaedic Residency Program, Phoenix, AZ, USA

4:36pm - 4:41pm
113
M. Pelton1, S.J. Fineberg1, M. Oglesby1, K. Singh1, A. Patel2
1Rush University Medical Center, Orthopaedic Surgery, Chicago, IL, USA, 2Northwestern University Feinberg School of Medicine, Orthopaedic Surgery, Chicago, IL, USA

4:42pm - 4:47pm
538
Comparison of root shadow between Post-myelographic CT and MRI in degenerative lumbar spine disease
H.-J. Lee1, C.-K. Park1
1Seoul St Mary’s Hospital, Department of Neurosurgery, Seoul, Korea, Republic of

4:48pm - 4:53pm
64
The Relationship between Disc Herniation and Adjacent Segmental Motion in the Lumbar Spine: A Dynamic Evaluation Using Kinetic MRI
Z. Fei1,2, H. Shen1, D. Wang1, J. Wang3
1Sun Yat-sen University Memorial Hospital, Guangzhou, China, 2Zhejiang University School of Medicine, Hangzhou, China, 3University of California, Los Angeles, CA, USA

4:53pm - 5:00pm
DISCUSSION
5:00pm - 6:00pm

CASE STUDIES WORLD CAFÉ
Rooms:  1 and 2/3

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. ISASS13 will continue and expand on past successes with featured events developed by leaders in the spine industry.

World Café Case Studies and Demonstration Tables

At this year’s meeting, ISASS’ innovative Case Studies World Café program will be based around case studies on two topics:

- C5-6 Disc Herniation
- L4-5 Stenosis – Spondylolisthesis

Device demonstration tables will be added to expand the World Café program content. A tabletop for each participating device company will be available for hands-on product display. Surgeons will visit each tabletop for a specific period of time and rotate to the following table. The devices will remain in the room for the World Café session while related cases are discussed.

Participants must select either C5-6 Disc Herniation or L4-5 Stenosis-Spondylolisthesis cases to review.

After rounds of discussion, the groups will gather to share and explore emerging outcomes, insights and new knowledge. By cross-pollinating ideas and sharing thoughts, collective discoveries and outcomes will be developed that will be meaningful to case outcomes.

C5-6 Disc Herniation
Rick Sasso, MD
Room:  1

L4-5 Stenosis - Spondylolisthesis
Antonio Castellvi, MD
Room:  2/3
Friday | April 5th

8:00am - 9:00pm
INFECTIONS/TUMOR
Room: East Ballroom B-C
Moderators: Chun-Kun Park, MD, PhD and James Yue, MD

8:00am - 8:06am
356
The Relationship between Pre-op ESR and CRP Level and Spine Surgery Infections
T. Morrison1, X. Hu1, I.H. Lieberman1
1Parkview Orthopaedic Clinic, Citizens Memorial Hospital, Brighton, MO, USA, 2Texas Back Institute, Texas Health Presbyterian Hospital Plano, Scoliosis and Spine Tumor Center, Plano, TX, USA

8:07am - 8:13am
59
Pyogenic Spondylitis Caused by Staphylococcus Aureus
H. Aono1, T. Ohwada2, H. Tobimatsu1, Y. Nagamoto1, S. Okuda1, S. Suzuki1, T. Oda1, T. Fuji3, M. Iwasaki3
1Osaka National Hospital, Orthopedic Surgery, Osaka, Japan, 2Kansai Rosai Hospital, Orthopedic Surgery, Amagasaki, Japan, 3Osaka Rosai Hospital, Orthopedic Surgery, Sakai, Japan, 4Suita Municipal Hospital, Orthopedic Surgery, Suita, Japan, 5Osaka Koseinenkin Hospital, Orthopedic Surgery, Osaka, Japan, 6Osaka University Graduate School of Medicine, Orthopedic Surgery, Suita, Japan

8:14am - 8:20am
361
Emergent Surgical Management of Epidural Abscess: A Retrospective Study
J. Belding1, F. Christopher1
1University Hospitals of Cleveland, Orthopedics, Cleveland, OH, USA

8:21am - 8:27am
325
One-stage Posterior Debridement, Interbody Graft, Rectification and Fixation for Thoracolumbar Tuberculosis
Q. Zhou1
1Institute of Orthopaedics of Chinese PLA, Southwest Hospital, Third Military Medical University, Chongqing, China

8:28am - 8:34am
441
Biomechanical Analysis of Spinal Pelvic Reconstruction after Total Sacrectomy: Comparison of Three Techniques
A.J. Clark1, J.A. Tang2, J.M. Leasure3, M.E. Ivan1, J.M. Buckley1, V. Deviren1, C.P. Ames1
1UCSF, Neurosurgery, San Francisco, CA, USA, 2Taylor Collaboration Laboratories, San Francisco, CA, USA, 3UCSF, Orthopaedic Surgery, San Francisco, CA, USA

8:35am - 8:41am
122
Incidence and Mortality of Surgical Site Infections after Lumbar Spine Surgery
M. Pelton1, S.J. Fineberg1, M. Oglesby1, K. Singh1, A. Patel2
1Rush University Medical Center, Orthopedic Surgery, Chicago, IL, USA, 2Northwestern University Feinberg School of Medicine, Orthopaedic Surgery, Chicago, IL, USA

8:42am - 9:00am
DISCUSSION

9:00am - 10:00am
SYMPOSIUM
INDUSTRY SPONSORED RESEARCH: BUSINESS AS USUAL
Room: East Ballroom B-C

Opening and Welcome
Christopher Bono, MD

Will in-house studies of new products continue?
G. Bryan Cornwall, PhD

Will collaborative research funding organizations play a larger role, and if so, can they fulfill industry needs?
Sammy Elmariah, MD, MPH

Will there be a need for third party research organizations to separate funding from trial design, execution, and data analysis?
Charles Fisher, MD, FRCSC

Discussion

10:30am - 11:00am
CUTTING EDGE TECHNOLOGY - IMAGING GUIDANCE
Room: East Ballroom B-C
Moderators: Rudolf Bertagnoli, MD and Stephen Hochschuler, MD

10:30am - 10:36am
331
Image Quality and Safety of Cervical, Thoracic and Lumbar Spine MRI Studies at 1.5T Are Not Adversely Affected by the Presence of an Implanted Cardiac Device
D. Doud1, D.G. Chang2, U. Birgersdotter-Green3, S.R. Garfin3, R.J. Russo1
1Scripps Clinic Torrey Pines, Division of Cardiovascular Diseases, La Jolla, CA, USA, 2University of California, San Diego, Division of Cardiology, La Jolla, CA, USA, 3University of California, San Diego, Orthopaedic Surgery, San Diego, CA, USA

10:30am - 10:36am
362
The Influence of Corticosteroids on the Response to Percutaneous Laser Ablation in Patients with Metastatic Bone Pain
G. Bacon1, K. Ogawa1, J. Scott2, S. Kraybill3
1University of California, San Diego, Orthopaedic Surgery, San Diego, CA, USA, 2University of California, San Francisco, Radiology, San Francisco, CA, USA, 3University of California, San Francisco, Radiation Oncology, San Francisco, CA, USA
Friday | April 5th

10:37am - 10:43am

509
Blood Loss in Spine Tumour Surgery - How Much Can the Surgeon Expect?
Y. Chen1, K.H.Z. Chu1, R. Goy2, R.W.M. Lam1, N.S. Kumar1
1National University Health System, Department of Orthopaedic Surgery, Singapore, Singapore, 2National University Health System, Department of Anaesthesia, Singapore, Singapore

10:44am - 10:50am

496
Improving Segmental Lordosis with a Crescent Shaped Hydraulic Expandable TLIF Cage: Safety, Efficacy and Early Clinical Outcomes
D.G. Crandall1,2, S. Berven3, N. Anand4, A. Byrd5, M. Kadaba6, J. Revelia7
1Sonoran Spine Center, Mesa, AZ, USA, 2Sonoran Spine Research and Education Foundation, Phoenix, AZ, USA, 3UC San Francisco, Orthopaedic Surgery, San Francisco, CA, USA, 4Cedars-Sinai Spine Center, Spine Trauma Spine Center, Los Angeles, VA, USA, 5Atlantic Orthopaedic Specialists, Virginia Beach, VA, USA, 6CoAlign Innovations Inc, Brisbane, CA, USA

10:51am - 10:57am

486
Novel Approach to Control Iatrogenic Great Vessel Laceration during Pedicle Subtraction Osteotomy
P.T. Guillen1, P.A. Ta2, W.K. Cheng1
1Loma Linda University Medical Center, Orthopaedic Surgery, Loma Linda, CA, USA, 2Loma Linda University Medical Center, Loma Linda, CA, USA

10:58am - 11:04am

218
Magnetically Controlled Growing Rods for Early Onset Scoliosis: A Preliminary Report
G. La Rosa1, L. Ruzzini1, L. Oggiano1
1Bambino Gesù Children’s Hospital, IRCCS, Palidoro, Department of Surgery and Transplants Center, Orthopedic Unit, Fiumicino, Italy

11:05am - Noon

DISCUSSION

11:12am - 11:22am

96
Comparison of Cranial Facet Joint Violation Rates between Open and Percutaneous Pedicle Screw Placement Using Intraoperative 3-D CT Computer Navigation
S.C. Yson1, J.N. Sembrano1, P.C. Sanders1, E.R.G. Santos1, C.T. Ledonio1, D.W. Polly, Jr.1,2
1University of Minnesota, Orthopaedic Surgery, Minneapolis, MN, USA, 2University of Minnesota, Neurosurgery, Minneapolis, MN, USA

11:23am - 11:29am

445
C.M. Menezes1, L.M. Andrade2
1Lifecenter Hospital, Spine Surgery, Belo Horizonte, Brazil, 2Axial Centro de Imagens, Radiology, Belo Horizonte, Brazil

11:30am - 11:36am

497
Minimally Invasive versus Open Sacroiliac Joint Fusion: A Comparison of Process Measures and Description of Technique
E.R.G. Santos1, C.G. Ledonio1, D.W. Polly1, J.N. Sembrano1, B. Azmoudeh1
1University of Minnesota, Orthopaedics, Minneapolis, MN, USA

11:37am - 11:43am

87
Interobserver Reliability of CT Scans to Assess Radiographic Fusion Criteria with a Novel Titanium Interbody Device
P.J. Slosar1, L. Marrero1, J. Kaiser2, D. Sacco3
1Spine Care Medical Group, San Francisco Spine Institute, San Francisco, CA, USA, 2California Advanced Imaging Medical Associates, Novato, CA, USA, 3National Orthopedic Imaging Associates, Greenbrae, CA, USA

11:44am - 11:50am

269
Accuracy of Robotic Assisted Pedicle Screw Placement in Deformity and Revision Spine Surgeries
I.H. Lieberman1, X. Hu1
1Texas Back Institute, Texas Health Presbyterian Hospital Plano, Scoliosis and Spine Tumor Center, Plano, TX, USA

11:51am - Noon

DISCUSSION

1:00pm - 2:15pm

WHAT’S NEW IN BIOLOGICS AND BIOMECHANICS
Room: East Ballroom B-C
Moderator: Donna Ohnmeiss, DrMed

1:00pm - 1:05pm

173
Association of Telomerase Expression with Recurrence of Sacral Chordoma
H. Hu1, H.L. Yang1, Z.X. Zeng1, J. Lu1, K.W. Chen1, Y.H. Qiu1, W. Liu1, Z.P. Luo1
1Orthopedic Institute at Soochow University, Suzhou, China

1:06pm - 1:11pm

381
Does Medication Routinely Used for Discography Influence Intervertebral Disc Biology?
C. Eder1, A. Pinsger1, S. Schildböck1, M. Ogon1
1Orthopädisches Spital Speising, Vienna, Austria
1:12pm - 1:17pm
343
Mesenchymal Stem Cell Technology in Lumbar Interbody Fusion: Clinical Evidence of Safety and Efficacy
P.D. Nunley1, A. Jawahar1, E.J. Kerr2, P.A. Utter1
1Spine Institute of Louisiana, Clinical Research, Shreveport, LA, USA

1:18pm - 1:23pm
155
Bone Marrow Aspirate from the Vertebral Body: The Effect of Temperature, Media, and Time on Nucleated Cell Survival
M.L. Webb1, R. Badrinath1, J.W. Hustedt1, D.D. Bohl1, J.N. Grauer1
1Yale Department of Orthopaedics and Rehabilitation, New Haven, CT, USA

1:24pm - 1:29pm
467
M. Wang1,2, S.A. Abbah1, J. Goh1, H.K. Wong1
1National University of Singapore, Department of Orthopaedic Surgery, Singapore, Singapore, 2Duke-NUS Graduate Medical School, Singapore, Singapore

1:30pm - 1:35pm
193
Biomechanical Modeling of Vertebral Compression Fractures
A.K. Mehta1, S. Marcinek1, S. Lee1, T. Slater1
1Medtronic Spine & Biologics, Research and Development Department, Sunnyvale, CA, USA

1:36pm - 1:41pm
407
Genomic and Proteomic Characterization of the Progenitor Population in Cellular Allograft Bone
T.A. Moseley1, G.M. Williams1, E.M. Erbe1
1NuVasive, Inc., Biologics R&D, San Diego, CA, USA

1:42pm - 1:47pm
241
Prevalence of Spondylolisthesis and Concomitant Adolescent Idiopathic Scoliosis: A Matched Cohort Analysis
R.A. Lehman1, D.G. Kang1, L.G. Lenke2, K. Blanke2, E.E. Transfeldt3, H. Labelle4, S. Parent5, J.-M. Mac-Thiong6, J. Cody1, R. Tracey1, 1Spinal Deformity Study Group, Walter Reed National Military Medical Center, Orthopaedic Surgery, Bethesda, MD, USA, 2Washington University School of Medicine, Orthopaedic Surgery, St Louis, MO, USA, 3Twin Cities Spine Center, Minneapolis, MN, USA, 4CHU Saint-Justine Research Center, Universite de Montreal, Montreal, QC, Canada

1:48pm - 1:53pm
248
Pedicle Screw Re-insertion Using Previous Pilot Hole and Trajectory Does Not Reduce Fixation Strength
R.W. Tracey1, D.G. Kang1, R.A. Lehman1, A.J. Belevino1, M. Donahue1, R. Gaume1, D. Ambati1, A.E. Dmitriev2
1Walter Reed National Military Medical Center, Orthopaedic Surgery, Bethesda, MD, USA

1:54pm - 1:59pm
300
The Insertion Forces and Impact Involved in Trialing a Continuously Expandable TLIF Spacer and a Static Cage
J. Torretti1, B. Bucklen2, M. Moldavsky2, S. Khalil2
1Mount Nittany Medical Center, State College, PA, USA, 2Globus Medical, Inc., Audubon, PA, USA

2:00pm - 2:05pm
365
Biomechanical Analysis of a Single-level 360° Lumbar Spine Arthroplasty: An in vitro Cadaveric Study
A. Nayak1, M. Doarn2, R.B. Gaskins3, C.R. James4, A. Cabezas1, B.G. Santoni1, A.E. Castelli1
1Foundation for Orthopaedic Research and Education, Tampa, FL, Orthopaedic Biomechanics Research, Tampa, FL, USA, 2University of South Florida, Department of Orthopaedic Surgery and Sports Medicine, Tampa, FL, USA, 3Florida Orthopaedic Institute, Center for Spinal Surgery and Disorders, Tampa, FL, USA

2:06pm - 2:15pm
DISCUSSION

2:15pm - 3:30pm
LATERAL INTERBODY FUSION
Room: East Ballroom B-C
Moderator: Robert Isaacs, MD

2:15pm - 2:20pm
422
Neurologic Complications in Extreme Lateral Interbody Fusion (XLIF): A Comparative Analysis of Levels L2-3, L3-4, and L4-5
W.D. Smith1,2
1University Medical Center of Southern Nevada, Neurosurgery, Las Vegas, NV, USA, 2Western Regional Center for Brain & Spine Surgery, Neurosurgery, Las Vegas, NV, USA

2:21pm - 2:26pm
448
Quantifying Radiation Exposure during Minimally Invasive Lateral Interbody Fusion
J.H. Bagley1, S. Brigeman1, A. Marky1, J. Xi1, C. Brown1, R.E. Isaacs1
1Duke University Medical Center, Durham, NC, USA
Femoral Nerve Strain at L4-5 is Minimized by Hip Flexion and Increased by Table Break when Performing Lateral Interbody Fusion

J.R. O’Brien1, Z.A. Dooley2, A.W.L. Turner2
1George Washington University Hospital, Washington, DC, USA, 2NuVasive, Inc., San Diego, CA, USA

Retroperitoneal Oblique Window to the L2-S1 Intervertebral Discs in the Lateral Position: An Anatomic Study

T.T. Davis1, R. Hynes2, S. Spann3, M. MacMillan4, B. Kwon5, J. Liu6, F. Acosta1, T. Drochner7
1The Center for Spine and Joint Restoration, Santa Monica, CA, USA, 2B.A.C.K. Center, Melbourne, FL, USA, 3Westlake Orthopaedics and Spine, Austin, TX, USA, 4University of Florida, Orthopaedics and Rehabilitation, Gainesville, FL, USA, 5Tufts University School of Medicine, Orthopedic Surgery, Boston, MA, USA, 6Cedars Sinai Medical Center, Los Angeles, CA, USA, 7Medtronic Spine & Biologics, Memphis, TN, USA

Failure of Indirect Decompression with the Extreme Lateral Interbody (XLIF) Approach: A Study of Radiographic Factors

I. Karikari1, O. Adogwa2, T. Owens3, K. Knott4, C. Brown1, L. Pimenta2, R. Isaacs1
1Duke University Medical Center, Durham, NC, USA, 2Duke University, Durham, NC, USA, 3Instituto de Patologia de Coluna, Sao Paulo, Brazil

Radioisotope Correction and Clinical Outcomes of Lateral Lumbar Interbody Fusion (LLIF) with Open versus Percutaneous Screw Fixation in Degenerative Scoliosis Patients

C. Chang1, J. Attinello1, Y.P. Lee1, S.R. Garfin1, R.T. Allen1
1UC San Diego Health System, Department of Orthopaedic Surgery, La Jolla, CA, USA

Complications of Minimally Invasive Spinal Surgery (MISS) for Correction of Adult Spinal Deformity – A 5 Year Experience

N. Anand1, B. Khandehroo2, S. Kahwaty1, E.M. Baron1
1Cedars Sinai Medical Center, Spine Center, Los Angeles, CA, USA