

# **CURRICULUM VITAE**

## **NEEL ANAND, MD**

### **ADDRESS**

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### **EDUCATION**

#### **FELLOWSHIPS**

##### **Scoliosis and Spinal Deformities, Mar 1994-Jul 1994**

Hospital for Special Surgery, Cornell University  
New York, New York

##### **Trauma, Aug 1994-Jul 1995**

Hospital for Special Surgery, Cornell University  
New York, New York

##### **Reconstructive Spinal Surgery, July 1993-Feb 1994**

Spinal Associates of North Central Florida, University of Florida Gainesville,  
Florida

#### **RESIDENCY**

##### **Albert Einstein College of Medicine, 1996-2000**

Orthopaedic Program at The Bronx-Lebanon Hospital Center  
Bronx, New York

##### **Elective Residency Rotation, Nov 1998-Jan 1999**

Texas Back Institute  
Plano, Texas

##### **Royal College of Surgeons of England, Jan 1990-Jun 1993**

Royal Liverpool University Hospital & Royal Liverpool Children's Hospital,  
Liverpool, United Kingdom

##### **University of Bombay, Dec 1983 -Dec 1989**

B.Y.L. Nair Hospital  
Bombay, India

#### **INTERNSHIP**

##### **New York Medical College, 1995-1996**

Lincoln Medical and Mental Health Center &  
Our Lady of Mercy Medical Center, Bronx, New York

#### **MEDICAL SCHOOL**

##### **Doctor of Medicine, 1979-1983**

University of Bombay, T.N. Medical College  
Bombay, India

## **APPOINTMENTS**

July 2013 to Present	Clinical Professor of Surgery Cedars-Sinai Medical Center Los Angeles, California
April 2012 to Present	Director, Spinal Trauma Cedars-Sinai Spine Center Los Angeles, California
2005 to April 2012	Director, Orthopedic Spine Surgery Cedars-Sinai Spine Center Los Angeles, California
2005 to 2007	Director, Spine Fellowship Cedars-Sinai Institute for Spinal Disorders Los Angeles, California
2005 to 2007	Director, Minimally Invasive Spine Surgery Cedars-Sinai Institute for Spinal Disorders Los Angeles, California
2002 to 2005	Director, Spine Trauma Cedars-Sinai Institute for Spinal Disorders Los Angeles, California
2000-2001	Attending Physician Cedars-Sinai Institute for Spinal Disorders Los Angeles, California

## **LICENSES AND CERTIFICATIONS**

Board certified by: American Board of Orthopaedic Surgeons, 2004, 2013  
Royal College of Surgeons in England, 1994

### **ECFMG CERTIFICATION**

USMLE: 0-461-669-4                      1994

New York Medical License                      1998:

Nevada Medical License                      2000:

California Medical License                      2000:

General Medical Council (GMC), UK.                      1992:

Maharashtra Medical Council, India.                      1984:

## PROFESSIONAL ORGANIZATIONS

- Founding Member – Society for Minimally Invasive Spinal Surgery (SMISS)
- Board of Directors, SMISS
- Education Committee SMISS 2011/2014
- Treasurer SMISS 2011/2012
- Founding Member – Society for Lateral Access Surgery (SOLAS)
- National Director – ONE Spine Society
- Charter Member – Society of Nucleus Arthroplasty (SONA)
- Scoliosis Research Society (SRS)
- Web Site Committee of Scoliosis Research Society (SRS) 2007-2008
- Instrumentation Committee of Scoliosis Research Society (SRS) 2007-2008
- Adult Deformity Committee (SRS) 2013-2014
- American Academy of Orthopaedic Surgeons (AAOS)
- North American Spine Society (NASS)
- Spine Arthroplasty Society (SAS)/ Int'l Society for the Advancement of Spinal Surgery (ISASS)
- Publication Committee for ISASS/SAS 2011/2012
- Educational Committee for ISASS/SAS 2011/2012, 2013/2014
- Program Committee for ISASS/SAS 2011/2012, 2014/2015
- Spine Trauma Study Group (STSG)
- Degenerative Spine Study Group
- MAST Deformity Focus Group
- Complex Spine Study Group (CSSG)
- Clinical Academic Promotions and Appointments Council (Clin-APAC) – Cedars-Sinai

## CLINICAL INVESTIGATION PROTOCOLS

Principal Investigator: Pivotal FDA IDE Clinical Study – A Clinical Study to evaluate the **Acadia Facet Replacement System (AFRS)**, Facet Solutions, Hopkinton, MA./Globus Medical, Audubon, PA; 2009 to present

Principal Investigator: A Phase II, Randomized, Double Blind, Placebo Controlled Study Evaluating the Treatment of Degenerative Lumbar Discs with Allogeneic Cultured Chondrocytes (**NuQu**), ISTO Technologies, Inc, St. Louis, MO; 2013

Principal Investigator: **Stabilimax NZ** Study Participants Collection of Add'l Follow up Data, Clinical Investigational Plan, R-001; Rachiotek, LLC, Wellesley, MA, 2012

Principal Investigator: Trial Evaluating the Safety and Effectiveness of **NUBAC™ Disc Arthroplasty**, Pioneer Surgical Technology, Inc, Marquette, MI, 2009 to 2010

Principal Investigator: Pivotal FDA IDE Clinical Study - A Clinical Study Comparing Dynamic Stabilization of the Lumbar Spine with the **STABILIMAX NZ™** Dynamic Spine Stabilization System to Posterolateral Instrumented Fusion, Applied Spine Technologies, New Haven, CT, 2007 to 2010

Principal Investigator: Pivotal FDA IDE Clinical Study – A Prospective Randomized Controlled Clinical Investigation of **DIAM Spinal Stabilization System** in Patients with Lumbar Degenerative Disc Disease, Medtronic Inc, Memphis, TN, 2007 to 2008

Principal Investigator: Pivotal FDA IDE Clinical study – A Pivotal Multi-Center Randomized Controlled Trial Evaluating the Safety and Effectiveness of **NeoDisc** versus Instrumented Anterior Cervical Discectomy and Fusion (ACDF) in Subjects with Single Level Cervical Disc Disease, Nuvassive, San Diego, CA, 2006 to 2009

Co-Investigator: Pivotal IDE clinical Study - **PCM Artificial Cervical Disc Replacement**, Cervitech Inc., Rockaway, NJ, 2006 to 2008.

Principal Investigator: Pivotal FDA IDE clinical Study of the **Dynesys Spinal System** as a Non-Fusion for Spinal Stabilization, Zimmer Spine, Minneapolis, MN, 2003 to 2006

Co-Investigator: Pivotal IDE study of the **Bryan Cervical Disc Prosthesis** in the Treatment of Degenerative Disc, Medtronic Inc, Memphis, TN, 2003 to 2004.

Co-Investigator: Pivotal IDE study of the **SBIII Charité Lumbar Disc Prosthesis**, Johnson and Johnson, Raynham, MA, 2001-2004.

## HONORS AND AWARDS

- 1987 – 1988    **Best Resident**, B.Y.L. Nair Charitable Hospital / Bombay, India  
1980            **Honors in Human Anatomy**, University of Bombay / Bombay, India  
1988            **Dr H.D. Dastur Gold Medal** (1st Rank), *FCPS.Orth.* Examinations / Bombay, India  
1992            **Khazenifar Gold Medal**, Best overall clinical performance at the *Mch. Orth.* Examinations / University of Liverpool, U.K.  
2011            Leon Wiltse Award for Best Clinical Paper, Las Vegas, SAS 2011: **“Long Term 2 to 4 year Clinical and Functional Outcomes of Minimally Invasive Surgery (MIS) for Adult Spinal Deformity”**  
2012            Orthopedics This Week Spine Technology Awards. Category: Minimally Invasive Care. SMISS  
2015            **Nominated Best Paper, SMISS 2015:** Analysis of the 10 best and 10 worst functional outcomes to Circumferential Minimally Invasive Surgical (CMIS) correction of Adults Spinal Deformity (ASD)

## EXPERIENCE

April 2012 – present

**Director, Spinal Trauma**

Spine Center, Cedars-Sinai Medical Center, Los Angeles, California

2005 –April 2012

**Director, Orthopaedic Spine Surgery**

Spine Center, Cedars-Sinai Medical Center, Los Angeles, California

2005 - 2007

**Director, Spine Fellowship**

Cedars-Sinai Institute for Spinal Disorders, Cedars-Sinai Medical Center, Los Angeles, California

2004 – 2007

**Director, Minimally Invasive Spinal Surgery**

Cedars-Sinai Institute for Spinal Disorders, Cedars-Sinai Medical Center, Los Angeles, California

January 2002 – April 2005

**Director, Spine Trauma**

Cedars-Sinai Institute for Spinal Disorders, Cedars-Sinai Medical Center, Los Angeles, California

September 2000 – December 2001

**Orthopaedic Spine Surgeon**

Cedars-Sinai Institute for Spinal Disorders, Cedars-Sinai Medical Center, Los Angeles, California

July 1996 – June 2000

**Orthopaedic Residency**

Albert Einstein College of Medicine, Orthopaedic Program at Bronx Lebanon Hospital Center  
Bronx, New York

November 1998 – January 1999

**Elective Spine Surgery Rotation**

Texas Back Institute, Plano, Texas

July 1995 – July 1996

**Surgical Internship**

New York Medical College, Lincoln Medical & Mental Health Center, Bronx, New York

March 1994 – July 1995

**Staff Orthopaedic Surgeon**

New York Hospital, Cornell University, New York, New York

August 1994 – July 1995

**Trauma Fellowship**

Hospital for Special Surgery, Cornell University, New York, New York

March 1994 – July 1994

**Scoliosis Fellowship**

Hospital for Special Surgery, Cornell University, New York, New York

August 1993 – February 1994

**Reconstructive Spinal Surgery Fellowship**

University of Florida, Gainesville, Florida

January 1993 – June 1993

**Orthopaedic Residency**

Royal Liverpool University Hospital, Liverpool, United Kingdom

January 1990 – December 1992

**Orthopaedic Residency**

Royal College of Surgeons of England, London, United Kingdom

February 1985 – December 1989

**Orthopaedic Residency**

B.Y.L.Nair Ch. Hospital, Bombay, India

**PUBLICATIONS**

1. **Anand N**, DeLima DF, Tanna DD: Internal Fixation of Pott's Fractures. *Clinical Orthopedics India* 3:113-119, 1988.
2. **Anand N**, DeLima DF, Rao AA, Tanna DD: Harrington Rod versus Segmental Spinal Instrumentation for Traumatic Spines. *Clinical Orthopedics India* 4:33-38, 1989.
3. **Anand N**, Agrawal VA, Laheri VJ, Tanna DD: Intramedullary Fixation of Fracture of Shaft Femur with K-Nail. *Bombay Hospital Journal* 31 (3):63-68, 1989.
4. **Anand N**, DeLima DF, Tanna DD: Isolated Posterior Dislocation of the Radial Head in an Adult. *Bombay Hospital Journal* 32 (4):115-116, 1990.
5. Agrawal VA, Maniar RN, **Anand N**, Talwalkar CA: Papineau Bone Grafting in cases of Infected Bony Cavities and Infected Non-Unions. *Bombay Hospital Journal* 32 (2):25-28, 1990.
6. **Anand N**, Klenerman L: Ankle Fractures in the Elderly - MUA v/s ORIF. *Injury* 24 (2):116-120, 1993.
7. **Anand N**, Tanna DD. Unconventional Pedicle Spinal Instrumentation - The Bombay Experience (A study of 90 patients - Late Results). *Spine* 19:2150-2158, 1994.
8. **Anand N**, Levine DL, Burke S, Bansal M: Neuropathic (Charcot) Spinal Arthropathy in Charcot-Marie-Tooth Disease. *J Bone and Joint Surg.* 79-A (8):1235-1239, August 1997.
9. **Anand N**, Helfet DL, Malkani AL, Quinn TJ, Green DST, Burga S: Intraoperative Monitoring of Motor Pathways during Operative Fixation of Acute Acetabular Fractures. *The Journal of Orthopedic Trauma* 11(1):2-6, 1997.
10. **Anand N**, Idio Jr. FG, Remer S, Hoppenfeld S: The Effects of Perioperative Blood Salvage and Autologous Blood Donation on Transfusion Requirements in Scoliosis Surgery. *Journal of Spinal Disorders* 11(6):532-534, December 1998.
11. **Anand N**, Helfet DL: Acute Both Column Fractures of the Acetabulum, Orthopaedic Grand Rounds-Trauma, AAOS CD ROM Publications, 2000.

12. **Anand N**, Regan JJ, Bray RS: Cervical Spine Disability Questionnaire and Treatment Intensity Questionnaire-Objective Outcome Measures of Cervical Spine Functional Status. An Analysis of Psychometric Properties, December 2001.
13. **Anand N**, Regan JJ, Bray RS: Posterior Cervical Foraminotomy - Long-term Results and Functional Outcome of a Consecutive Series of Patients with Minimum 2-year Follow-Up. *The Spine Journal* 2(2):5, March 2002.
14. **Anand N**, Regan JJ: Video-Assisted Thoracoscopic Surgery for Thoracic Disc Herniation – Classification and Outcome Study of 100 Consecutive Cases with Min. 2 year Follow-up. *Spine* 27 (8): 871-879, 2002.
15. **Anand N**, Helfet DL, Kloen P, Rosen, HS: Open Reduction and Internal Fixation of Delayed Unions and Nonunions of Fractures of the Distal Part of the Humerus. *J Bone and Joint Surg.* 85-A(1):33-40, Jan 2003.
16. **Anand N**, Helfet DL, Kloen P, , Rosen HS: ORIF of Delayed Unions and Nonunions of Distal Humeral Fractures Surgical Technique. *J Bone and Joint Surgical Techniques*, 86-A (1):18-29, March 2004.
17. Johnson JP, Laurysen C, Cambron HO, **Anand N**, Pashman RS, Regan JJ, Bray R: Sagittal alignment and the Bryan cervical artificial disc. *Neurosurg Focus* 17(6): E14, Dec 15, 2004.
18. Johnson JP, Pashman RS, Laurysen C, **Anand N.**, Regan JJ, Bray RS: The Changing Role for Neurosurgeons and the Treatment Spinal Deformity. *J Neurosurg Spine* 2:233-242, March 2005.
19. Harrop JS, Vaccaro AR, Hurlbert RJ, Wilsey JT, Baron EM, Shaffrey CI, Fisher CG, Dvorak MF, Oner FC, Wood KB, **Anand N**, Anderson DG, Lim MR, Lee JY, Bono CM, Arnold PM, Rampersaud YR, Fehlings MG; Spine Trauma Study Group: Intrarater and interrater reliability and validity in the assessment of the mechanism of injury and integrity of the posterior ligamentous complex: a novel injury severity scoring system for thoracolumbar injuries. Invited submission from the Joint Section Meeting on Disorders of the Spine and Peripheral Nerves, March 2005. *J Neurosurgery Spine* 4(2):118-122, Feb 2006.
20. James S. Harrop, M.D., Alexander R. Vaccaro, M.D., R. John Hurlbert, M.D., Ph.D., Jared T. Wilsey, Ph.D., Eli M. Baron, M.D., Christopher I. Shaffrey, M.D., Charles G. Fisher, M.D., Marcel F. Dvorak, M.D., F. C. Öner, M.D., Kirkham B. Wood, M.D., **Neel Anand, M.D.**, D. Greg Anderson, M.D., Moe R. Lim, M.D., Joon Y. Lee, M.D., Christopher M. Bono, M.D., Paul M. Arnold, M.D., Y. Raja Rampersaud, M.D., Michael G. Fehlings, M.D., Ph.D., and The Spine Trauma Study Group Intrarater and interrater reliability and validity in the assessment of the mechanism of injury and integrity of the posterior ligamentous complex: a novel injury severity scoring system for thoracolumbar injuries Invited submission from the Joint Section Meeting on Disorders of the Spine and Peripheral Nerves, March 2005. *WSJ.* 2006;1(2):40-44
21. **Anand N**, Vaccaro AR, Lim MR, Lee JY, Arnold P, Harrop JS, Ratlif J, Rampersaud R, Bono CM, Spine Trauma Group: Evolution of Thoracolumbar Trauma Classification Systems: Assessing the conflict between mechanism and morphology of injury. *Top Spinal Cord Inj Rehabil* 2006; 12 (1): 70-78
22. Rampersaud YR, **Anand N**, Dekutoski MB.: Use of minimally invasive surgical techniques in the management of thoracolumbar trauma: current concepts. *Spine.* 2006 May 15;31(11 Suppl):S96-102; discussion S104. Review
23. Bono CM, Vaccaro AR, Hurlbert RJ, Arnold P, Oner FC, Harrop J, **Anand N**: Validating a Newly

Proposed Classification System for Thoracolumbar Spine Trauma: Looking to the Future of the Thoracolumbar Injury Classification Injury Classification and Severity Score (TLICS), *J Orthop Trauma*. 2006 Sep; 20 (8): 567-572

24. **Anand N**, Hamilton JF, Perri BR, Miraliakbar H, Goldstein T: Cantilever TLIF with structural allograft and rhBMP2 for correction and maintenance of segmental sagittal lordosis: clinical, radiographic and functional outcome. *Spine*. 2006 Sep 15;31(20):E748-53.
25. Raja Rampersaud Y, Fisher C, Wilsey J, Arnold P, **Anand N**, Bono CM, Dailey AT, Dvorak M, Fehlings MG, Harrop JS, Oner FC, Vaccaro AR.: Agreement between Orthopedic and Neurosurgeons regarding a new algorithm for the treatment of thoracolumbar injuries: a multi-center reliability study. *J Spinal Disord Tech*. 2006 Oct;19(7):477-482
26. Perri BR, Cooper M, Laurysen C, **Anand N**: Adverse swelling associated with use of rh-BMP-2 in anterior cervical discectomy and fusion: a case study. *The spine journal* 2007;7:235-239.
27. **Anand N**, Ratliff J, Vaccaro AR, Lim MR, Lee JY, Arnold P, Harrop JS, Rampersaud YR, Bono CM, and the Spine Trauma Study Group: Regional Variability in Use of a Novel Assessment of Thoracolumbar Spine Fractures: United States versus International Surgeons. Neurosurgery (in review)
28. John Ratliff, **Neel Anand** , Alexander Vaccaro , Moe Lim , Joon Lee , Paul Arnold , James Harrop , Raja Rampersaud , Christopher Bono , Ralf Gahr: Regional Variability in Use of a Novel Assessment of Thoracolumbar Spine Fractures: United States versus International Surgeons. *World J Emerg Surg*. 2007 Sep 7;2 (1):24 17825106
29. **Anand, N**, Baron, EM, Bray, RS. Benefits of Paraspinal muscle-sparing approach versus the conventional Midline approach for Posterior NonFusion Stabilization – Comparative analysis of clinical and functional outcomes. *SAS Journal September 2007 (Vol. 1, Issue 3, Pages 93-99)*. DOI: SASJ-2007-0006-RR
30. **N. Anand**, E. Baron. Unilateral TLIF with Unilateral Instrumentation: A Consecutive Series of 35 Patients with Minimum 2 Year Follow-up. *The Spine Journal, Volume 7, Issue 5, Pages 157S-158S*
31. Ali Araghi, **Neel Anand**, HarvinderSandhu, Hyun Bae; Clinical Symposium I: Pedicle-Based Posterior Non-Fusion Stabilization; *The SAS Journal; December 2007 (Vol. 1, Issue 4, Pages 147-159)*
32. **Anand, N**, Baron, EM, Thaiyananthan, T, Khalsa, K, Goldstien, TB. Minimally invasive spinal fusion for lumbar degenerative scoliosis: Feasibility Study. *Journal of Spinal Disorders and Techniques*. October 2008, 21(7):459-67.
33. **Anand, N**, Baron, EM, Bray, RS, Jr. Modified Muscle-Sparing Paraspinal Approach for Stabilization and Interlaminar decompression – A Minimally Invasive Technique for Pedicle Screw-Based Posterior Non-Fusion Stabilization. *SAS Journal*. March 2008 (Vol. 2, Issue 1, Pages 40-42). DOI: SASJ- 2007-0120-MIS
34. Mark Dekutoski, **Neel Anand**, Ralf Gahr, Laurie Mihalik, Paul Huddleston; Open vs Percutaneous Stabilization of Thoracic and Lumbar Fracture in Ankylosing Spondylitis and DISH. *The Spine Journal, Volume 8, Issue 5, page 181S (2008)*
35. **Neel Anand**, Harvinder Sandhu: Clinical Symposium II: Interspinous-based Dynamic Stabilization; *The SAS Journal; September 2008 (Vol. 2, Issue 3, Pages 150-154)*



36. Mark Dekutoski, Paul Huddleston, **Neel Anand**, Joseph Riina, Robert Isaacs, Ralf Gahr; Thoracolumbar Fracture Management with Selective Fusion and Instrumentation Removal Open vs Percutaneous Stabilization of Thoracic and Lumbar Fracture in Ankylosing Spondylitis and DISH. *The Spine Journal, Volume 9, Issue 5, pages 83-84S (2009)*
37. A Ploumis, R Ponnappan, J Sarbello, M Dvorak, M Fehlings, E Baron, **N. Anand**, D. Okonkwo, A Patel, A Vaccaro: Thromboprophylaxis in Traumatic and Elective Spinal Surgery; *SPINE Volume 35, Number 3, pp 323–329 (2010)*
38. **N. Anand**, R. Rosemann, B Khalsa, E Baron; Mid-term to long-term clinical and functional outcomes of minimally invasive correction and fusion for adults with scoliosis; *Neurosurg Focus 28 (3):E6, (2010)*
39. Samudrala S, Vaynman S, Thiayananthan T, Ghostine S, Bergey DL, **Anand N**, Pashman RS, Johnson JP. Cervicothoracic junction kyphosis: surgical reconstruction with pedicle subtraction osteotomy and Smith-Petersen osteotomy. *J Neurosurg Spine. 2010 Dec;13(6):695-706.*
40. **Anand, N**, Baron, EM; Minimally Invasive Treatment of Adult Scoliosis. *Seminar in Spine Surgery, 2011*
41. **Anand, N**, Baron, EM; Minimally Invasive Approaches for the Correction of Adult Spinal Deformity. *European Spine Journal, 2012. Supplement: Innovative concepts in scoliosis treatment*
42. **Anand, N**, Baron, EM. Urologic Injury as a Complication of the Transposas Approach for Discectomy and Interbody Fusion – A report of 3 cases. *J Neurosurg Spine. 2012 Nov 2.*
43. Anand N, Baron EM: Role of Dynesys as Pedicle-Based Nonfusion Stabilization for Degenerative Disc Disorders; *Advances in Orthopedics; 2012;2012:218385. doi: 10.1155/2012/218385*
44. O. Boachie-Adjei, **N. Anand**, G. Fleischer, K. Kabaish, M. Melgar, R. Nasca, T. Raley; Neurosurgical forum Letter to the Editor: Lumbar Interbody Fusion; *J Neurosurg: Spine / January 11, 2013*
45. Popovich JM Jr, Welcher JB, Hedman TP, Tawackoli W, **Anand N**, Chen TC, Kulig K; Lumbar facet joint and intervertebral disc loading during simulated pelvic obliquity. *Spine J. 2013 May 21. doi:pii: S1529-9430(13)00412-9. 10.1016/j.spinee.2013.04.011. PMID: 23706384 [PubMed.gov]*
46. **Anand N**, Baron EM, Khandehroo B, Kahwaty S.: Long-term 2- to 5-year clinical and functional outcomes of minimally invasive surgery for adult scoliosis. *Spine; 2013 Aug 15;38(18):1566-75.*
47. Tobler WD, Melgar MA, Raley TJ, **Anand N**, Miller LE, Nasca RJ: Clinical and radiographic outcomes with L4-S1 axial lumbar interbody fusion (AxiaLIF) and posterior instrumentation: a multicenter study. *Med Devices (Auckl). 2013 Sep 18;6:155-61.PMID:24092998[PubMed.gov]*
48. Mummaneni PV, Shaffrey CI, Lenke LG, Park P, Wang MY, La Marca F, Smith JS, Mundis GM Jr, Okonkwo DO, Moal B, Fessler RG, **Anand N**, Uribe JS, Kanter AS, Akbarnia B, Fu KM; Minimally Invasive Surgery Section of the International Spine Study Group: The minimally invasive spinal deformity surgery algorithm: a reproducible rational framework for decision making in minimally invasive spinal deformity surgery. *Neurosurg Focus, 36 (5): E6, May 2014*
49. Uribe JS, Deukmedjian AR, Mummaneni PV, Fu KM, Mundis GM Jr, Okonkwo DO, Kanter AS, Eastlack R, Wang MY, **Anand N**, Fessler RG, La Marca F, Park P, Lafage V, Deviren V, Bess S, Shaffrey CI; International Spine Study Group: Complications in adult spinal deformity surgery: an analysis of minimally invasive, hybrid, and open surgical techniques. *Neurosurg Focus; 36 (5): E15, May 2014*

50. **Anand N**, Baron E.M., Khandehroo B: Limitations and ceiling effects with circumferential minimally invasive correction techniques for adult scoliosis: analysis of radiological outcomes over a 7-year experience. *Neurosurg Focus*; 36 (5): E14, May 2014
51. Haque RM<sup>1</sup>, Mundis GM Jr, Ahmed Y, El Ahmadih TY, Wang MY, Mummaneni PV, Uribe JS, Okonkwo DO, Eastlack RK, **Anand N**, Kanter AS, La Marca F, Akbarnia BA, Park P, Lafage V, Terran JS, Shaffrey CI, Klineberg E, Deviren V, Fessler RG; International Spine Study Group: Comparison of radiographic results after minimally invasive, hybrid, and open surgery for adult spinal deformity: a multicenter study of 184 patients. *Neurosurg Focus.*; 36(5):E13. May 2014
52. Wang MY<sup>1</sup>, Mummaneni PV, Fu KM, **Anand N**, Okonkwo DO, Kanter AS, La Marca F, Fessler R, Uribe J, Shaffrey CI, Lafage V, Haque RM, Deviren V, Mundis GM Jr; Minimally Invasive Surgery Section of the International Spine Study Group: Less invasive surgery for treating adult spinal deformities: ceiling effects for deformity correction with 3 different techniques. *Neurosurg Focus.* 2014 May; 36(5):E12.
53. **Anand N.**, Baron E.M., Kahwaty S: Evidence basis/outcomes in minimally invasive spinal scoliosis surgery. *Neurosurgery Clinics of North America*; 2014 Apr;25(2):361-75
54. **Anand N.**, Baron E.M., Khandehroo B.: Is Circumferential Minimally Invasive Surgery Effective in the Treatment of Moderate Adult Idiopathic Scoliosis? *Clinical Orthopedics and Related Research*; 2014 Jun; 472(6): 1762–1768.
55. **Anand N.**, Baron E.M., Khandehroo B.: Does minimally invasive transsacral fixation provide anterior column support in adult scoliosis? *Clinical Orthopedics and Related Research*; 2014 Jun;472(6):1769-75
56. Lau D, Clark AJ, Scheer JK, Daubs MD, Coe JD, Paonessa KJ, LaGrone MO, Kasten MD, Amaral RA, Trobisch PD, Lee JH, Fabris-Monterumici D, **Anand N**, Cree AK, Hart RA, Hey LA, Ames CP; SRS Adult Spinal Deformity Committee; Proximal junctional kyphosis and failure after spinal deformity surgery: a systematic review of the literature as a background to classification development. *Spine* 2014 Dec 1;39(25):2093-102
57. Park P<sup>1</sup>, Wang MY, Lafage V, Nguyen S, Ziewacz J, Okonkwo DO, Uribe JS, Eastlack RK, **Anand N**, Haque R, Fessler RG, Kanter AS, Deviren V, La Marca F, Smith JS, Shaffrey CI, Mundis GM Jr, Mummaneni PV; International Spine Study Group; Comparison of two minimally invasive surgery strategies to treat adult spinal deformity. *J Neurosurg Spine.* 2015 Apr;22(4):374-80
58. Melgar MA, Tobler WD, Ernst RJ, Raley TJ, **Anand N**, Miller LE, Nasca RJ: Segmental and global lordosis changes with two-level axial lumbar interbody fusion and posterior instrumentation. *Int J Spine Surg.* 2014 Dec 1;8
59. Scheer JK<sup>1</sup>, Fakurnejad S, Lau D, Daubs MD, Coe JD, Paonessa KJ, LaGrone MO, Amaral RA, Trobisch PD, Lee JH, Fabris-Monterumici D, **Anand N**, Cree AK, Hart RA, Hey LA, Ames CP; SRS Adult Spinal Deformity Committee: Results of the 2014 SRS Survey on PJK/PJF: A Report on Variation of Select SRS Member Practice Patterns, Treatment Indications, and Opinions on Classification Development. *Spine* 2015 Jun 1;40(11):829-40
60. Mummaneni PV<sup>1</sup>, Park P, Fu KM, Wang MY, Nguyen S, Lafage V, Uribe JS, Ziewacz J, Terran J, Okonkwo DO, Anand N, Fessler R, Kanter AS, LaMarca F, Deviren V, Bess RS, Schwab FJ, Smith JS, Akbarnia BA, Mundis GM Jr, Shaffrey CI: Does Minimally Invasive Percutaneous Posterior

Instrumentation Reduce Risk of Proximal Junctional Kyphosis in Adult Spinal Deformity Surgery? A Propensity-Matched Cohort Analysis. *Neurosurgery*. 2015 Sep 4

61. Park P, Okonkwo DO, Nguyen S, Mundis GM Jr, Than KD, Deviren V, La Marca F, Fu KM, Wang MY, Uribe JS, Anand N, Fessler R, Nunley PD, Chou D, Kanter AS, Shaffrey CI, Akbarnia BA, Passias PG, Eastlack RK, Mummaneni PV; International Spine Study Group: Can a Minimal Clinically Important Difference Be Achieved in Elderly Patients With Adult Spinal Deformity Who Undergo Minimally Invasive Spinal Surgery? *World Neurosurg*. 2015 Sep 29
62. **Anand N**, Sardar ZM., Simmonds A, Khanderoo B, Kahwaty S, Baron EM. Correction of Adult Spinal Deformity via Circumferential Minimally Invasive Surgery—Analysis of a 7-Year Experience. *Spine Deformity*. Article in press
63. Baron EM, Mejía DM, Drazin D, **Anand N**. Perineural cyst associated with bone morphogenetic protein use in posterior and transforaminal lumbar interbody fusion managed conservatively: Report of 2 Cases. Submitted for Publication.

## CHAPTERS

1. **Anand N**, Helfet D: chapter 8: Cannulated Screws in Pelvic Fractures. In: *Cannulated Screw Fixation—Principles and Operative Techniques*, eds. Stanley E. Asnis MD and Richard F. Kyle MD, Springer-Verlag, NY, 1996.
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## **ABSTRACTS (POSTERS AND PODIUM PRESENTATIONS)**

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  83. **Neel Anand, MD**, Rebecca Rosemann PA-C, Eli M. Baron, MD Minimally invasive AxiaLIF L5-S1 Interbody Fusion for anterior column support at the end of a long segment fusion: 1 year Clinical and Functional Outcome. Spine Arthroplasty Society (SAS) Annual Meeting, 2009, London, UK
  84. **Neel Anand, MD**; Eli Baron, MD, Rebecca Rosemann, MS, PA-C Posterior Non-Fusion Stabilization of the Lumbar Spine for Degenerative Disc Disease with the Dynesys System – Minimum 3 year Clinical, Radiological and Functional. Spine Arthroplasty Society (SAS) Annual Meeting, 2009, London, UK

85. **Neel Anand, MD**, Eli M. Baron, MD, Rebecca Rosemann, PA-C; Minimally Invasive Percutaneous Circumferential Correction and Fusion for Adult Spinal Deformity: 1.5-year Clinical and Radiological results. Spine Arthroplasty Society (SAS) Annual Meeting, 2009, London, UK
86. **Anand, N**, Baron, EM, Rosemann, R, Härtl, R, Kitchel, S, Patel, V, Safety and Complication Profile of Percutaneous Lumbosacral Interbody Fusion. 16th International Meeting on Advanced Spine Techniques (IMAST), July, 2009, Vienna, Austria
87. **Anand, N**, Rosemann, R, Baron, EM. Minimally invasive AxiaLIF L5-S1 Interbody Fusion for anterior column support at the end of a long segment fusion: 1 year Clinical and Functional Outcome. 16th International Meeting on Advanced Spine Techniques (IMAST), July, 2009, Vienna, Austria
88. **Anand, N**, Baron, EM, Rosemann, R. Minimally Invasive Percutaneous Circumferential Correction and Fusion for Adult Spinal Deformity: 1.5 year Clinical and Radiological Results. 16th International Meeting on Advanced Spine Techniques (IMAST), July, 2009, Vienna, Austria.
89. **Anand, N**, Baron, EM, Rosemann, R. Posterior Non-Fusion Stabilization of the Lumbar Spine for Degenerative Disc Disease with the Dynesys System– Minimum 3 year Clinical, Radiological and Functional Outcomes. 16th International Meeting on Advanced Spine Techniques (IMAST), July 2009, Vienna, Austria.
90. **Anand, N**, Rosemann, R, Salinas, P, Baron, EM. Can Minimally Invasive Adult Spinal Deformity Correction maintain Lordosis and Global Sagittal Balance? 16th International Meeting on Advanced Spine Techniques (IMAST), July 2009, Vienna, Austria.
91. **Anand, N**, Rosemann, R, Lorio, M. One year results from a US IDE trial evaluating a dynamic stabilization system designed to restore the neutral zone .16th International Meeting on Advanced Spine Techniques (IMAST), July 2009, Vienna, Austria.
92. **Anand, N**, Baron, EM, Rosemann, R, Härtl, R, Kitchel, S, Patel, V, Safety and Complication Profile of Percutaneous Lumbosacral Interbody Fusion. Congress of Neurological Surgeons meeting New Orleans, Louisiana, October 24 - 29, 2009.
93. Mark Dekutoski, Paul Huddleston, **Neel Anand**, Joseph Riina, Robert Isaacs, Ralf Gahr; Thoracolumbar Fracture Management with Selective Fusion and Instrumentation Removal Open vs Percutaneous Stabilization of Thoracic and Lumbar Fracture in Ankylosing Spondylitis and DISH. North American Spine Society (NASS), San Francisco, CA, November 2009
94. **N. Anand**, B. Robie, N. Wharton, L. Ferrara, K. Yonemura, A.E. Castellvi: Quantity and Quality of Motion in Stenosis Patients; SAS 10<sup>th</sup> Annual meeting, New Orleans, LA, April 2010
95. A.E. Castellvi, A. Khandha, N. Wharton, L. Ferrara, **N. Anand**, J. Cheng; An Analysis of the PostOp Performance of the Stabilimax® Posterior Dynamic Stabilization (PDS) Implant through Measurement of Range of Motion (ROM) and InterPedicular Travel (IPT); SAS 10<sup>th</sup> Annual meeting, New Orleans, LA, April 2010
96. **N. Anand**, R. Rosemann, E. Baron; Mid to Long Term, 1-2 Year Radiological Analysis of Minimally Invasive Surgery for Adult Scoliosis; SAS 10<sup>th</sup> Annual meeting, New Orleans, LA, April 2010
97. **N. Anand**, R. Rosemann, B. Khalsa, E. Baron; Minimally Invasive AxiaLIF L5-S1 Interbody Fusion for Anterior Column Support at the End of a Long Segment Fusion: 1 to 2 year Clinical and Functional

Outcomes; SAS 10<sup>th</sup> Annual meeting, New Orleans, LA, April 2010

98. **N. Anand**, R. Balderstone, P.C. McAfee, S.R. Chinthakunta, S. Khalil, A. Ingalthalikal, M. Moldavsky; Fatigue Effect on an Artificial Posterolateral Lumbar Disc Replacement: An in-vitro Cadaveric Model; SAS 10<sup>th</sup> Annual meeting, New Orleans, LA, April 2010
99. R. Balderstone, **N. Anand**, G.S. Deol, S.R. Chinthakunta, S. Khalil, A. Ingalthalikal, M. Moldavsky; Determining Physiologic Fatigue Characteristics of an Artificial Posterolateral Lumbar Disc Replacement Using Center of Rotation; SAS 10<sup>th</sup> Annual meeting, New Orleans, LA, April 2010
100. **N. Anand**, R. Balderstone, S.R. Chinthakunta, S. Khalil, A. Ingalthalikal, M. Moldavsky; Quantifying Subsidence of a Novel Artificial Posterolateral Lumbar Disc Replacement Post-fatigue Testing: A Cadaveric Study; SAS 10<sup>th</sup> Annual meeting, New Orleans, LA, April 2010
101. R. Balderstone, **N. Anand**, N. Khanna, S.R. Chinthakunta, S. Khalil, A. Ingalthalikal; Migration of an Artificial Posterolateral Lumbar Disc Replacement (PLDR) Pre-fatigue and Post-fatigue: An in-vitro Cadaver Model; SAS 10<sup>th</sup> Annual meeting, New Orleans, LA, April 2010
102. R.Dryer, J.Regan, C.Hartjen, W.B.Rodgers, D. DiRisio, K.Pettine, J.Youssef, A. Rhyne, E.Laxer, M.Lorio, J.Marzluff, J.Highsmith, K.Rahn, R.Shugart, A.D.Tahernia, C.Morgan, W.Ceola, **N.Anand**, R.Delamarter, S.Hodges; Prospective US IDE Trial: Interim Results for the Treatment of Symptomatic Lumbar Spinal Stenosis with Facet Replacement in 100 Patients Enrolled at 15 Centers; NASS 25<sup>th</sup> Annual Meeting, Orlando, FL, October 2010
103. **N. Anand**, E. Baron; Safety and Complications of Profile of Percutaneous Lumbosacral Axial Interbody Fusion, Society for Minimally Invasive Spine Surgery (SMISS), Miami, FL, October 2010.
104. D.DiRisio, J.Regan, C.Hartjen, R.Dryer, W.B.Rodgers, K.Pettine, J.Youssef, A.Rhyne, E.Laxer, L.Spector, M.Lorio, J.Marzluff, J.Highsmith, K.Rahn, R.Shugart, A.D.Tahernia, C.Morgan, T.Briggs, J.Ferguson, **N.Anand**,R.Delamarter, S.C.Humphreys, S.Hodges, P.Connolly, Treatment of 110 Symptomatic Lumbar Stenosis Patients at 16 Centers in an FDA IDE Facet Replacement Study;American Assoc. Neurological Surgeons Annual Meeting, Denver, CO, April 9-13, 2011
105. **N. Anand**, S. Kahwaty, S. Daroudi, E. Baron, Long Term 2 to 4 year Clinical and Functional Outcomes of Minimally Invasive Surgery (MIS) for Adult Spinal Deformity, ISASS, Las Vegas, NV, April, 2011
106. **N. Anand**, S. Kahwaty, E. Baron, S. Daroudi, A. King, O. Boachie-Adjei, Multicenter Minimally Invasive AxialLIF L5-S1 Interbody Fusion for Anterior Column Support at the End of a Long Segment Construct: Feasibility, Safety, Complications, Early and Late 3 Year Outcomes, ISASS/SAS, Las Vegas, NV, April 26-29, 2011
107. J.A. Youssef, J.J. Regan, C.A. Hartjen, R.F. Dryer, W.B. Rodgers, K. Pettine, D.J. DiRisio, A.L. Rhyne, E.B. Laxer, L.B. Spector, M.P. Lorio, J.M. Marzluff, J.M. Highsmith, K.A. Rahn, R.M. Shugart, A.D. Tahernia, C.J. Morgan, T.B. Briggs, J.F. Ferguson, W.M. Ceola, **N. Anand**, R.B. Delamarter, S.C. Humphreys, S. Hodges, P. Connolly; Prospective Randomized FDA IDE Pivotal Study of Symptomatic Lumbar Spinal Stenosis Patients Treated with ACADIA™: Interim Perioperative and Clinical Outcomes for the Investigational Device, ISASS/SAS, Las Vegas, NV, April 26-29, 2011
108. **Anand, Neel**; Kahwaty, Sheila; Daroudi, Shideh; Baron, Eli; Boachie-Adjei, Ohenaba, Multicenter Minimally Invasive AxialLIF L5-S1 Interbody Fusion for Anterior Column Support at the End of a Long Segment Construct: Feasibility, Safety, Complications, Early and Late 3 Year Outcomes, Int'l Society for

the Study of the Lumbar Spine (ISSLS), Gothenburg, Sweden, June 14-18, 2011

109. **Anand, Neel**; Daroudi, Shideh; Kahwaty, Sheila; Baron, Eli, Long Term 2 To 4 Year Clinical and Functional Outcomes of Minimally Invasive (MIS) For Adult Spinal Deformity, Int'l Society for the Study of the Lumbar Spine (ISSLS), Gothenburg, Sweden, June 14-18, 2011
110. **Neel Anand, MD**; Sheila Kahwaty, PA-C; Babak Khandehroo, MD; Eli Baron, MD; Two to Four Year Functional Outcomes of Minimally Invasive Surgery (MIS) for Adult Spinal Deformity, IMAST, Copenhagen, Denmark, July 13-16, 2011
111. Dennis Crandall, MD; Eric Huish, BS; Sigurd H. Berven, MD; **Neel Anand, MD**; Murali P. Kadaba, PhD, MBA; Ryan McLemore, PhD; Radiographic Comparison of Fixed Cage vs. Expandable Cage in TLIF, IMAST, Copenhagen, Denmark, July 13-16, 2011
112. **Neel Anand, MD**; Sheila Kahwaty, PA-C; Babak Khandehroo, MD; Eli Baron, MD; Two to Four Year Functional Outcomes of Minimally Invasive Surgery (MIS) for Adult Spinal Deformity; SRS 46<sup>th</sup> Annual Meeting, Louisville, KY, September 14-17, 2011
113. **Neel Anand, MD**; Babak Khandehroo, MD; Jeffrey Toll, BA; Eli M Baron, MD; Sheila Kahwaty, PA-C; Long Term Clinical and Functional Outcomes of Minimally Invasive Surgery for Significant Thoracolumbar Scoliosis (COBB angle greater than 30°); SMISS Annual Meeting, Las Vegas, Nevada, October 21-23, 2011
114. **Neel Anand, MD**; Babak Khandehroo, MD; Jeffrey Toll, BA; Eli M Baron, MD; Sheila Kahwaty, PA-C; Long Term 2 to 4 year Clinical and Functional Outcomes of Minimally Invasive Surgery (MIS) for Adult Spinal Deformity; SMISS Annual Meeting, Las Vegas, Nevada, October 21-23, 2011
115. **Neel Anand, MD**; Babak Khandehroo, MD; Jeffrey Toll, BA; Eli M Baron, MD; Sheila Kahwaty, PA-C; Minimally Invasive AxialLIF for Anterior Column Support in Long Segment Constructs: Minimum 1 year Functional and Clinical Outcomes; SMISS Annual Meeting, Las Vegas, Nevada, October 21-23, 2011
116. **Anand, N**, Khandehroo, B, Kahwaty S, Baron, E. M. Can Transsacral AxialLIF Fixation at the Bottom of a Long Construct Avoid the Need for Iliac Bolt? International Society for the Advancement of Spine Surgery (ISASS) - Barcelona, Spain - March 20-23, 2012
117. **Anand, N**, Khandehroo, B, Kahwaty S, Baron, E. M. Can Minimally Invasive Surgical Strategies for Deformity Correction Avoid the Need for Routine Osteotomies in Moderate to Severe Adult Scoliosis? International Society for the Advancement of Spine Surgery (ISASS) - Barcelona, Spain - March 2012
118. **Anand, N**, Khandehroo, B, Kahwaty S, Baron, E. M. Minimally Invasive Pedicle Screw Instrumentation and Fusion for Adult Scoliosis - Functional and Radiological Outcomes; International Society for the Advancement of Spine Surgery (ISASS) - Barcelona, Spain - March 20-23, 2012
119. **N. Anand**, T. Castellvi, K. Yonemura, S. Kitchel, B.C. Cheng, B. Robie; 24 month functional outcomes from a US IDE trial evaluating a lumbar posterior dynamic stabilization (PDS) system with Interpedicular Travel (IPT) International Society for the Advancement of Spine Surgery (ISASS) - Barcelona, Spain - March 20-23, 2012
120. S.H. Kitchel, **N. Anand**, A. Castellvi, K. Yonemura, B. Cheng, B. Robie; Failure Analysis of Patients in a US IDE trial of a Posterior Dynamic Stabilization System who Did Not Achieve Primary Success

Endpoints;International Society for the Advancement of Spine Surgery (ISASS) - Barcelona, Spain - March 20-23, 2012

121. B.C. Cheng, S. Kitchel, A.E. Castellvi, K. Yonemura, **N. Anand**, B. Robie; Radiographic Assessment of Stabilimax Patients at 12 mos Follow up; International Society for the Advancement of Spine Surgery (ISASS) - Barcelona, Spain - March 20-23, 2012
122. S.H. Kitchel, **N. Anand**, A. Castellvi, K. Yonemura, B. Cheng, B. Robie; Screw Radiolucency Is Not Predictive of Clinical Failure at 2 years in Posterior Pedicle Based Dynamic Stabilization; International Society for the Advancement of Spine Surgery (ISASS) - Barcelona, Spain - March 20-23, 2012
123. **Anand, Neel**, Khandehroo, Babak, Baron, Eli, Kahwaty Sheila; Does Minimally Invasive Surgical (MIS) Treatment of Adult Spinal Deformities Affect the Incidence of Proximal Junctional Kyphosis?; 19<sup>th</sup> International Meeting on Advanced Spine techniques (IMAST); Istanbul, Turkey, July 18-21, 2012
124. **Anand, Neel**, Khandehroo, Babak, Baron, Eli, Kahwaty Sheila; Can Transsacral AxiaLIF Fixation at the Bottom of a Long Construct Avoid the Need for Iliac Bolt?; Scoliosis Research Society; 19<sup>th</sup> International Meeting on Advanced Spine techniques (IMAST); Istanbul, Turkey, July 18-21, 2012
125. **Anand, Neel**, Khandehroo, Babak, Baron, Eli, Kahwaty Sheila; Can Minimally Invasive Surgical Strategies for Deformity Correction Avoid the Need for Routine Osteotomies in Moderate to Severe Adult Scoliosis?; Scoliosis Research Society; 19<sup>th</sup> International Meeting on Advanced Spine techniques (IMAST); Istanbul, Turkey, July 18-21, 2012
126. **Anand, Neel**, Khandehroo, Babak, Baron, Eli, Kahwaty Sheila; Minimally Invasive Pedicle Screw Instrumentation and Fusion for Adult Scoliosis - Functional and Radiological Outcomes; Scoliosis Research Society; 19<sup>th</sup> International Meeting on Advanced Spine techniques (IMAST); Istanbul, Turkey, July 18-21, 2012
127. **Anand, Neel**, Khandehroo, Babak, Baron, Eli, Kahwaty Sheila; Long Term 2 to 5 year Clinical and Functional Outcomes of Minimally Invasive Surgery (MIS) for Adult Spinal Deformity; Scoliosis Research Society; 19<sup>th</sup> International Meeting on Advanced Spine techniques (IMAST); Istanbul, Turkey, July 18-21, 2012
128. **Neel Anand, MD**; Babak Khandehroo, MD; Eli Baron, MD; Sheila Kahwaty, PA-C; Does Minimally Invasive Surgical (MIS) Treatment of Adult Spinal Deformities Affect the Incidence of Proximal Junctional Kyphosis (PJK)?, Annual Meeting of the Society for Minimally Invasive Spine Surgery (SMISS), Miami, FL, September 21-23, 2012
129. **Neel Anand, MD**; Babak Khandehroo, MD; Eli Baron, MD; Sheila Kahwaty, PA-C; Can Minimally Invasive Surgical (MIS) Strategies for Deformity Correction Avoid the Need for Routine Osteotomies in Moderate to Severe Adult Scoliosis? Annual Meeting of the Society for Minimally Invasive Spine Surgery (SMISS), Miami, FL, September 21-23, 2012
130. **Neel Anand, MD**; Babak Khandehroo, MD; Eli Baron, MD; Sheila Kahwaty, PA-C; Technique Related complications of circumferential Minimally Invasive spinal Surgery (MISS) for correction of Spinal Deformity - A 5 year experience. Annual Meeting of the Society for Minimally Invasive Spine Surgery (SMISS), Miami, FL, September 21-23, 2012
131. **Neel Anand, MD**; Babak Khandehroo, MD; Eli Baron, MD; Sheila Kahwaty, PA-C; Complications of Minimally Invasive spinal Surgery (MISS) for Correction of Spinal Deformity – A 5 year experience.



Annual Meeting of the American Academy of Orthopaedic Surgeons (AAOS), Chicago, IL, March 18-23, 2013.

132. **Neel Anand, MD**; Babak Khandehroo, MD; Eli Baron, MD; Sheila Kahwaty, PA-C; Technique Related complications of circumferential Minimally Invasive spinal Surgery (MISS) for correction of Spinal Deformity - A 5 year experience. Annual Meeting of the International Society for the Study of the Lumbar Spine (ISSLS), Scottsdale, Arizona, May 13-17, 2013.
133. **Neel Anand, MD**; Babak Khandehroo, MD; Eli Baron, MD; Sheila Kahwaty, PA-C; Does Minimally Invasive Surgical (MIS) Treatment of Adult Spinal Deformities Affect the Incidence of Proximal Junctional Kyphosis (PJK)? Annual Meeting of the International Society for the Study of the Lumbar Spine (ISSLS), Scottsdale, Arizona, May 13-17, 2013.
134. **N. Anand**, B. Khandehroo, S. Kahwaty, E.M. Baron, : Complications of Minimally Invasive spinal Surgery (MISS) for Correction of Spinal Deformity – A 5 year experience. Annual Meeting of International Society for the Advancement of Spine Surgery (ISASS), Vancouver, Canada, April 3-5, 2013.
135. **N. Anand**, B. Khandehroo, S. Kahwaty, E.M. Baron,: Does Minimally Invasive Surgical (MIS) Treatment of Adult Spinal Deformities Affect the Incidence of Proximal Junctional Kyphosis (PJK)? Annual Meeting of International Society for the Advancement of Spine Surgery (ISASS), Vancouver, Canada, April 3-5, 2013.
136. W.D. Tobler, T.J. Raley, **N. Anand**, R.J. Nasca, M.A. Melgar; Axial Presacral L4 to S1 Interbody Fusion using AxiaLIF and Posterior Instrumentation. Clinical Outcomes. Annual Meeting of International Society for the Advancement of Spine Surgery (ISASS), Vancouver, Canada, April 3-5, 2013.
137. W.D. Tobler, **N. Anand**, M.A. Melgar, T.J. Raley, R.J. Nasca; Evaluation of Lumbar Lordosis in Patients treated with the AxiaLIF 2 Level Implant and Posterior Instrumentation. Annual Meeting of International Society for the Advancement of Spine Surgery (ISASS), Vancouver, Canada, April 3-5, 2013.
138. D.G. Crandall, S. Berven, **N. Anand**, A. Byrd, M. Kadaba, J. Revella; Improving Segmental Lordosis with a Crescent Shaped Hydraulic Expandable TLIF Cage: Safety, Efficacy and Early Clinical Outcomes. Annual Meeting of International Society for the Advancement of Spine Surgery (ISASS), Vancouver, Canada, April 3-5, 2013.
139. R.Haque, MD; G.M. Mundis, MD; Y. M. Ahmed, BS; T. Y. El Ahmadi, MD; M.Y. Wang, MD; P.V. Mummaneni, MD; J. S. Uribe, MD; D.O. Okonkwo, MD, PhD; **N. Anand, MD**; A.S. Kanter, MD; F.La Marca, MD; V. Lafage, PhD; J.S. Terran, BS; V. Deviren, MD; R.G. Fessler, MD, PhD; International Spine Study Group; Comparison of Radiographic Results After Minimally Invasive (MIS), Hybrid (HYB) and Open (OPEN) Surgery for Adult Spinal Deformity (ASD): A Multi-Center Study of 184 Patients. 20<sup>th</sup> Int'l Meeting on Advanced Spine Techniques (IMAST), Vancouver, Canada, July 10-13, 2013
140. G.M. Mundis, MD; V.Lafage, PhD; B.A. Akbarnia, MD; R.K. Eastlack, MD; M.Y. Wang, MD; J. S. Uribe, MD; **N. Anand, MD**; P.V. Mummaneni, MD; D.O. Okonkwo, MD, PhD; A.S. Kanter, MD; F.La Marca, MD; R.G. Fessler, MD, PhD; C.I. Shaffrey, MD; V.Deviren, MD; International Spine Study Group; A Prospective Propensity Matched Cohort Analysis of Minimally Invasive (MIS), Hybrid (HYB), and Open Spine Surgery (OPEN) for the Treatment of Adult Spinal Deformity (ASD); 20<sup>th</sup> Int'l Meeting on Advanced Spine Techniques (IMAST), Vancouver, Canada, July 10-13, 2013

141. M.Y. Wang, MD; P.V. Mummaneni, MD; K-M. Fu, MD, PhD; **N. Anand, MD**; D.O. Okonkwo, MD, PhD; A.S. Kanter, MD; F. La Marca, MD; R.G. Fessler, MD, PhD; J.S. Uribe, MD; C.I. Shaffrey, MD; V. Lafage, PhD; R. Haque, MD; V. Deviren, MD; G.M. Mundis, MD; International Spine Study Group; Less Invasive Surgery for Treating Adult Spinal Deformities (ASD): Ceiling Effects for Cobb Angle Correction with Three Different Techniques; 20<sup>th</sup> Int'l Meeting on Advanced Spine Techniques (IMAST), Vancouver, Canada, July 10-13, 2013
142. J.S. Uribe, MD; G.M. Mundis, MD; D.O. Okonkwo, MD, PhD; A.S. Kanter, MD; R.K. Eastlack, MD; M.Y. Wang, MD; P.V. Mummaneni, MD; **N. Anand, MD**; R.G. Fessler, MD, PhD; F. La Marca, MD; P.Park, MD; V.Lafage, PhD; C.I. Shaffrey, MD; V.Deviren, MD; International Spine Study Group; Are Complications in Adult Spinal Deformity (ASD) Surgery Related to Approach or Patient Characteristics? A Prospective Propensity Matched Cohort Analysis of Minimally Invasive (MIS), Hybrid (HYB), and Open (OPEN) Approaches; 20<sup>th</sup> Int'l Meeting on Advanced Spine Techniques (IMAST), Vancouver, Canada, July 10-13, 2013
143. D. Crandall, MD; J.A. Byrd, MD; S.H. Berven, MD; **N. Anand, MD**; M.P. Kadaba, PhD, MBA; J.Revella, RN; L.Taylor; An Expandable Crescent Shaped TLIF Cage to Improve Segmental Lordosis: Safety, Efficacy, and Early Clinical Outcomes. 20<sup>th</sup> Int'l Meeting on Advanced Spine Techniques (IMAST), Vancouver, Canada, July 10-13, 2013
144. P.V. Mummaneni, MD; M.Y. Wang, MD; V. Lafage, PhD; J. Ziewacz, MD, MPH; J.S. Terran, BS; D.O. Okonkwo, MD, PhD; J.S. Uribe, MD; **N.Anand, MD**; R.G. Fessler, MD, PhD; A.S. Kanter, MD; F.La Marca, MD; C.I. Shaffrey, MD; V.Deviren, MD; G.M. Mundis, MD; International Spine Study Group; Does Minimally Invasive Posterior Instrumentation (PPI) Prevent Proximal Junctional Kyphosis (PJK) in Adult Spinal Deformity (ASD) Surgery? A Prospectively Acquired Propensity Matched Cohort Analysis; 20<sup>th</sup> Int'l Meeting on Advanced Spine Techniques (IMAST), Vancouver, Canada, July 10-13, 2013
145. D. Crandall, MD; L.Taylor; J.A.Byrd, MD; S.H. Berven, MD; **N. Anand, MD**; M.P. Kadaba, PhD, MBA; J.Revella,RN; Improving Local and Regional Lordosis in Degenerative Scoliosis: Preliminary Findings on the Effect of an Expandable TLIF Cage; 20<sup>th</sup> Int'l Meeting on Advanced Spine Techniques (IMAST), Vancouver, Canada, July 10-13, 2013
146. R.K. Eastlack, MD; G.M. Mundis, MD; M.Y. Wang, MD; P.V. Mummaneni, MD; J.S. Uribe, MD; D.O. Okonkwo, MD, PhD; B.A. Akbarnia, MD; **N.Anand, MD**; A.S. Kanter, MD; P.Park, MD; V.Lafage, PhD; C.I. Shaffrey, MD; R.G. Fessler, MD, PhD; V.Deviren, MD; International Spine Study Group; Is There a Patient Profile That Characterizes a Patient as a Candidate for Minimally Invasive Surgery (MIS) to Treat Adult Spinal Deformity (ASD)?; 20th Int'l Meeting on Advanced Spine Techniques (IMAST), Vancouver, Canada, July 10-13, 2013
147. **Neel Anand MD**,Babak Khandehroo MD, Eli M. Baron MD, Sheila Kahwaty PA-C; Limitations and Ceiling Effects of Circumferential Minimally Invasive Surgical (cMIS) techniques for the Treatment of Adult Scoliosis - Analysis of a 6-year experience, Annual Meeting of SMISS, Las Vegas, NV, Oct 1-3 2013
148. **N. Anand**, B. Khandehroo, S. Kahwaty, E.M. Baron ; Is there a limitation to correction of Sagittal balance with Circumferential Minimally Invasive Surgical (CMIS) correction of Adult Spinal Deformity (ASD)? 28<sup>th</sup> Annual Meeting of the North American Spine Society (NASS), New Orleans, LA, October 9-12, 2013.
149. **N. Anand**, B. Khandehroo, S. Kahwaty, E.M. Baron ; Does the Thoracolumbar Upper Instrumented Vertebra (UIV) Level Make a Difference in Proximal Junctional Kyphosis (PJK) with Circumferential

Minimally Invasive Surgical (CMIS) Correction of Adult Spinal Deformity (ASD)? 28<sup>th</sup> Annual Meeting of the North American Spine Society (NASS), New Orleans, LA, October 9-12, 2013.

150. G.M. Mundis, B.A. Akbarian, P. Mummaneni, A. Kanter, D. Okonkwo, P. Park, J. Uribe, V. Deviren, **N. Anand**, M. Wang, F. La Marca, R. Fessler, S. Nguyen, R.K. Eastlack, International Spine Study Group: Adult Spinal Deformity Treated with Minimally Invasive Techniques: 2-year Multicenter Clinical and Radiological Outcomes Study Comparing Circumferential MIS and Hybrid Surgery. 7<sup>th</sup> Annual SOLAS Research Meeting, Miami, FL, April 29, 2014.
151. B. Bolinger, K.M. Fu, P. Park, G.M. Mundis, **N. Anand**, F. La Marca, J. S. Uribe, M. Y. Wang, A.S. Kanter, D. Okonkwo, R. Fessler, V. Deviren, S. Nguyen, C.I. Shaffrey, B. Liabaud, B. Diebo, P. Mummaneni, International Spine Study Group: Do MIS Deformity Interventions Result in Similar Reductions of Disability Compared with Traditional Open Correction at 1 and 2 Years? A Propensity Matched Cohort Analysis. 7<sup>th</sup> Annual SOLAS Research Meeting, Miami, FL, April 29, 2014.
152. B. Bolinger, A.S. Kanter, G.M. Mundis, P. Mummaneni, **N. Anand**, R. Fessler, P. Passias, P. Park, F. La Marca, J. S. Uribe, M. Y. Wang, B. Liabaud, B. Diebo, B.A. Akbarian, C.I. Shaffrey, D. Okonkwo, International Spine Study Group: Re-Operation Rates in Minimally Invasive, Hybrid and Open surgery Treatment for Adult Spinal Deformity with Minimum 2-year Follow-up. 7<sup>th</sup> Annual SOLAS Research Meeting, Miami, FL, April 29, 2014.
153. **N. Anand**, B. Khandehroo, E.M. Baron, S. Kahwaty, J.E. Cohen, R.B. Cohen: Limitation and ceiling effects of Circumferential minimally Invasive Surgical (CMIS) Techniques for the Treatment of Adult Scoliosis- Analysis of a 6-year Experience. Annual Meeting of International Society for the Advancement of Spine Surgery (ISASS), Miami, FL April 30- May 2, 2014.
154. **N. Anand**, B. Khandehroo, E.M. Baron, S. Kahwaty, J.E. Cohen, R.B. Cohen: Reoperation and Immediate Readmission Rates after Circumferential Minimally Invasive Surgical (CMIS) Correction of Adult Spinal Deformities (ASD); Annual Meeting of International Society for the Advancement of Spine Surgery (ISASS), Miami, FL April 30- May 2, 2014.
155. **N. Anand**, B. Khandehroo, E.M. Baron, S. Kahwaty, J.E. Cohen, R.B. Cohen: 5 Year Outcomes and Survivorship Analysis of Posterior Pedicle Screw Non-fusion Stabilization; Annual Meeting of International Society for the Advancement of Spine Surgery (ISASS), Miami, FL April 30- May 2, 2014.
156. **N. Anand**, B. Khandehroo, E.M. Baron, S. Kahwaty, J.E. Cohen, R.B. Cohen: Correction of Sagittal Profile and Pelvic Parameters with CMIS Techniques for Treatment of Adult Scoliosis; Annual Meeting of International Society for the Advancement of Spine Surgery (ISASS), Miami, FL April 30- May 2, 2014.
157. A.D. Tahernia, J. Youssef, **N. Anand**, D. Coric, K. Baker, J. Mayer: ACADIA Facet Replacement System IDE Study, Preliminary Outcomes at Two and Four Years Postoperative; Annual Meeting of International Society for the Advancement of Spine Surgery (ISASS), Miami, FL April 30- May 2, 2014.
158. **Neel Anand, MD**; Babak Khandehroo, MD; Eli Baron, MD; Sheila Kahwaty, PA-C: Reoperation and immediate Readmission Rates after Circumferential Minimally Invasive Surgical (cMIS) Correction of Adult Spinal Deformities (ASD); 7th Annual Lumbar Spine Research Society Meeting (LSRS), Chicago, IL, May 1-2, 2014
159. Gregory M. Mundis, Behrouz A. Akbarian, Praveen V. Mummaneni, Adam S. Kanter, David O. Okonkwo, Paul Park, Juan S. Uribe, Vedat Deviren, **Neel Anand**, Michael Y. Wang, Frank La Marca,

- Richard G. Fessler, Stacie Nguyen, Robert K. Eastlack, International Spine Study Group: Adult Spinal Deformity Treated with Minimally Invasive Techniques; Two-year Multicenter Clinical and Radiographic Outcomes Study Comparing Circumferential MIS and Hybrid Surgery; 21<sup>st</sup> Int'l Meeting on Advanced Spine Techniques (IMAST), Valencia Spain July 16-19, 2014.
160. Paul Park, Praveen V. Mummaneni, Gregory M. Mundis, **Neel Anand**, Pierce D. Nunley, Juan S. Uribe, Michael Y. Wang, Adam S. Kanter, David O. Okonkwo, Richard G. Fessler, Vedat Deviren, Stacie Nguyen, Christopher I. Shaffrey, Kai-Ming Fu, International Spine Study Group: Does the Use of Minimally Invasive Pedicle Screw Fixation Lower The Rate of PJK? 21<sup>st</sup> Int'l Meeting on Advanced Spine Techniques (IMAST), Valencia Spain July 16-19, 2014.
  161. Kai-Ming Fu, Paul Park, Gregory M. Mundis, **Neel Anand**, Frank La Marca, Juan S. Uribe, Michael Y. Wang, Adam S. Kanter, David O. Okonkwo, Richard G. Fessler, Vedat Deviren, Stacie Nguyen, Christopher I. Shaffrey, Praveen V. Mummaneni, International Spine Study Group: Do MIS Deformity Interventions Result in Similar Reductions of Disability when Compared with Traditional Open Spinal Correction at One and Two Years? A Propensity Matched Cohort Analysis. 21<sup>st</sup> Int'l Meeting on Advanced Spine Techniques (IMAST), Valencia Spain July 16-19, 2014.
  162. Richard G. Fessler, Praveen V. Mummaneni, **Neel Anand**, Donald J. Blaskiewicz, Juan S. Uribe, Michael Y. Wang, Adam S. Kanter, David O. Okonkwo, Paul Park, Vedat Deviren, Stacie Nguyen, Christopher I. Shaffrey, Behrouz A. Akbarian, Gregory M. Mundis, International Spine Study Group: Does Minimally Invasive Pedicle Screw Placement Prevent Reoperation for Distal Junctional Failure When Fusion is to L5? A Two- Year Follow up Study. 21<sup>st</sup> Int'l Meeting on Advanced Spine Techniques (IMAST), Valencia Spain July 16-19, 2014.
  163. Christopher P. Ames, Justin K. Scheer, Michael D. Daubs, Jeffrey D. Coe, Kenneth j. Paonessa, Michael O. LaGrone, Michael D. Kasten, Rodrigo A. Amaral, Per D. Trobisch, Jung-Hee Lee, Daniele Fabris-Monterumici, **Neel Anand**, Andrew K. Cree, Robert A. Hart, Lioyd A. Hey; Results of The 2014 SRS Global Delphi Surgeon Survey on PJK/PJF: A Report on Surgeon View of Prevention and Treatment Indications, Classification and Guidelines. 21<sup>st</sup> Int'l Meeting on Advanced Spine Techniques (IMAST), Valencia Spain July 16-19, 2014.
  164. Adam S. Kanter, Gregory M. Mundis, Praveen V. Mummaneni, **Neel Anand**, Richard G. Fessler, Peter G. Passias, Paul Park, Virginie Lafage, Frank La Marca, Juan S. Uribe, Michael Y. Wang, Behrouz A. Akbarian, Christopher I. Shaffrey, David O. Okonkwo, International Spine Study Group: Re-Operation Rates in Minimally Invasive, Hybrid and Open surgery Treatment for Adult Spinal Deformity with Minimum 2-year Follow-up. 21<sup>st</sup> Int'l Meeting on Advanced Spine Techniques (IMAST), Valencia Spain July 16-19, 2014.
  165. **Neel Anand, MD**; Babak Khandehroo, MD; Eli Baron, MD; Sheila Kahwaty, PA-C: 5-Year Outcomes and Survivorship Analysis of Posterior Pedicle Screw Non-Fusion Stabilization; Annual Meeting of the Society for Min. Invasive Spine Surgery (SMISS), Miami, FL, Sept 19-21, 2014
  166. **Neel Anand, MD**; Babak Khandehroo, MD; Eli Baron, MD; Sheila Kahwaty, PA-C: Do Hyper-Lordotic Cages Help Create and Maintain Sagittal Alignment with MIS Correction of Adult Scoliosis?; Annual Meeting of the Society for Min. Invasive Spine Surgery (SMISS), Miami, FL, Sept 19-21, 2014
  167. Bryan Bolinger, DO; Adam Kanter, MD; Gregory Mundis Jr., MD; Praveen Mummaneni, MD; **Neel Anand, MD**; Richard Fessler, MD, PhD; Peter Passias, MD; Paul Park, MD; Frank Lamarca, MD; Juan S. Uribe, MD; Michael Wang, MD; Behrooz Akbarian, MD; Christopher Shaffrey, MD; David Okonkwo, MD, PhD: Re-Operation Rates in Minimally Invasive, Hybrid and Open Surgical Treatment for Adult

Spinal Deformity with Minimum 2-Year Follow-up; Annual Meeting of the Society for Min. Invasive Spine Surgery (SMISS), Miami, FL, Sept 19-21, 2014

168. Paul Park, MD; Praveen Mummaneni, MD; Gregory Mundis Jr., MD; **Neel Anand, MD**; Pierce Nunley, MD; Juan S. Uribe, MD; Michael Wang, MD; Adam Kanter, MD; David Okonkwo, MD; Richard Fessler, MD; Vedat Deviren, MD; Stacie Nguyen, MPH; Christopher Shaffrey, MD; Kai-Ming Fu, MD: Does the Use of Minimally Invasive Pedicle Screw Fixation Lower the Rate of PJK and Reoperation for PJK?; Annual Meeting of the Society for Min. Invasive Spine Surgery (SMISS), Miami, FL, Sept 19-21, 2014
169. Kai-Ming G. Fu, MD; Paul Park, MD; Gregory M. Mundis, MD; **Neel Anand, MD**; Frank La Marca, MD; Juan S. Uribe, MD; Michael Wang, MD; Adam Kanter, MD; David Okonkwo, MD; Richard Fessler, MD; Vedat Deviren, MD; Stacie Nguyen, MPH; Barthelemy Liabaud, MD; Behrooz Akbarnia, MD; Christopher Shaffrey, MD; International Spine Study Group: Do MIS Deformity Interventions Result in Similar Reductions of Disability when Compared with Traditional Open Spinal Deformity Correction at One and Two- years? A Propensity Matched Cohort Analysis; 29<sup>th</sup> Annual Meeting of the North American Spine Society (NASS), San Francisco, CA, November 12-15, 2014.
170. Gregory M. Mundis, MD; Behrooz Akbarnia, MD; Adam Kanter, MD; David Okonkwo, MD; Paul Park, MD; Juan S. Uribe, MD; Vedat Deviren, MD; **Neel Anand, MD**; Michael Wang, MD; Frank La Marca, MD; Richard Fessler, MD; Stacie Nguyen, MPH; Barthelemy Liabaud, MD; Robert K. Eastlack, MD; Bassel G. Diebo, MD; International Spine Study Group: Adult Spinal Deformity Treated with Minimally Invasive Techniques: Two Year Multicenter Clinical and Radiographic Outcomes Study Comparing Circumferential MIS and Hybrid Surgery; 29<sup>th</sup> Annual Meeting of the North American Spine Society (NASS), San Francisco, CA, November 12-15, 2014.
171. Gregory M. Mundis Jr., MD; Jay D. Turner, MD, PhD; Vedat Deviren, MD; Juan S. Uribe, MD; Pierce D. Nunley, MD; Christopher I. Shaffrey, MD; **Neel Anand, MD**; Paul Park, MD; David O. Okonkwo, MD; Michael Y. Wang, MD; Shay Bess, MD; Adam S. Kanter, MD; Richard G. Fessler, MD, PhD; Stacie Nguyen, MPH; International Spine Study Group: A Critical Analysis of Sagittal Plane Deformity Correction with Minimally Invasive Adult Spinal Deformity Surgery: A Two-Year Follow-Up Study; 30<sup>th</sup> Annual Meeting of the North American Spine Society (NASS), Chicago, IL, October 14-17, 2015.
172. Dean Chou, MD; Michael Y. Wang, MD; Donald J. Blaskiewicz, MD; Stacie Nguyen, MPH; Christofer I. Shaffrey, MD; David O. Okonkwo, MD; Adam S. Kanter, MD; Vedat Deviren, MD; Juan S. Uribe, MD; Robert K. Eastlack, MD; Pierce D. Nunley, MD; **Neel Anand, MD**; Paul Park, MD; Gregory M. Mundis Jr., MD; International Spine Study Group: The impact of Minimally Invasive Spinal Deformity Surgery on ICU and Hospital Stay; 30<sup>th</sup> Annual Meeting of the North American Spine Society (NASS), Chicago, IL, October 14-17, 2015.
173. **Neel Anand, MD**; Ryan Cohen; Jason Cohen; Babak Khandehroo, MD; Eli Baron, MD; Sheila Kahwaty, PA-C; Analysis of the 10 best and 10 worst functional outcomes of Circumferential Minimally Invasive Surgical (CMIS) correction of Adults Spinal Deformity (ASD); Annual Meeting for the Society for Minimally Invasive Spine Surgery (SMISS), Las Vegas, NV, November 5-7, 2015.
174. **Neel Anand, MD**; Zeeshan Sardar, MD; Paul Park, MD; Michael Wang, MD; Virginie Lafage, PhD; Stacie Nguyen, MPH; David Okonkwo, MD; Juan Uribe, MD; Robert Eastlack, MD; Richard Fessler, MD; Vedat Deviren, MD; Praveen Mummaneni, MD; Chistopher Shaffrey, MD; Gregory Mundis Jr, MD; International Spine Study Group; Comparison Of Early And Late

Complications After Circumferential Minimally Invasive And Hybrid Surgery For Adult Spinal Deformity; Annual Meeting for the Society for Minimally Invasive Spine Surgery (SMISS), Las Vegas, NV, November 5-7, 2015.

175. Paul Park, MD; Michael Wang, MD; Stacie Nguyen, MPH; Gregory Mundis, MD; Frank La Marca, MD; Juan Uribe, MD; **Neel Anand, MD**; David Okonkwo, MD, PhD; Adam Kanter, MD; Richard Fessler, MD, PhD; Robert Eastlack, MD; Dean Chou, MD; Vedat Deviren, MD; Pierce Nunley, MD; Christopher Shaffrey, MD; Praveen Mummaneni, MD; Comparison Of Complications And Clinical And Radiographic Outcomes Between Non-obese And Obese Patients With Adult Spinal Deformity Undergoing Minimally Invasive Surgery; Annual Meeting for the Society for Minimally Invasive Spine Surgery (SMISS), Las Vegas, NV, November 5-7, 2015.
176. **Neel Anand, MD**; Babak Khandehroo, MD; Ryan Cohen; Jason Cohen; Sheila Kahwaty, PA-C; Eli Baron, MD; Analysis Of Actual Segmental Lordosis Obtained With Lordotic And Hyperlordotic Later Cages- Analysis Of 172 Levels; Annual Meeting for the Society for Minimally Invasive Spine Surgery (SMISS), Las Vegas, NV, November 5-7, 2015.
177. Dean Chou, MD; Michael Wang, MD; Kai-Ming Fu, MD; Gregory Mundis Jr, MD; Christopher Shaffrey, MD; David Okonkwo, MD; Adam Kanter, MD; Vedat Deviren, MD; Juan Uribe, MD; Pierce Nunley, MD; **Neel Anand, MD**; Paul Park, MD; Praveen Mummaneni, MD; International Spine Study Group; The Impact of Minimally Invasive Spinal Deformity Surgery on ICU and Hospital Stay; Annual Meeting for the Society for Minimally Invasive Spine Surgery (SMISS), Las Vegas, NV, November 5-7, 2015.

## **THESES SUBMITTED**

1. **"Transpedicular Screw Fixation for Thoracolumbar and Lumbar Spinal Disorders" - The Bombay Experience**  
This Thesis was accepted to the University of Liverpool for the degree of *Mch.Orth. (1992)*.
2. **"Internal Fixation of Traumatic Spine - An analysis of various methods"**  
This Thesis was accepted to the University of Bombay for the degree of *M.S.Orth. (1988)*
3. **"Harrington Rod Instrumentation" - A method of treatment for fractures and fracture-dislocations of dorso-lumbar and lumbar spine with neurological involvement.**  
This Thesis was accepted to the College of Physicians and Surgeons of Bombay for the degree of *F.C.P.S.Orth. (1988)*

## VIDEO

1. **Anand N**, Hamilton J,: Cantilever TLIF (C-TLIF) for Maintenance and Correction of Segmental Sagittal Deformity. Innovative Treatment Options in Spine Surgery, SRS 39<sup>th</sup> Annual Meeting WEBCAST, Buenos Aires, September 2004.
2. **Anand N**, Hamilton J,: Cantilever TLIF (C-TLIF) for Reduction of Spondylolisthesis. Innovative Treatment Options in Spine Surgery, SRS 39<sup>th</sup> Annual Meeting WEBCAST, Buenos Aires, September 2004
3. Perri B, Siddique K, **Anand N**, Pashman RS, and Johnson JP. Charité SBIII Artificial Disc Replacement: Techniques for Surgical Implantation. Instructional Video in Vaccaro, AR, Baron, EM *Atlas of Spinal Surgery*. Elsevier Medical Publishing, Philadelphia. 2007
4. Brian Perri, **Neel Anand**, Gabriel Hunt, Leonel Hunt, MD: Cervicothoracic Deformity correction in Vaccaro, AR, Baron, EM *Atlas of Spinal Surgery*. Elsevier Medical Publishing, Philadelphia. 2007
5. **Neel Anand**, and Eli Baron: Paraspinal Approach and interlaminar decompression – A technique for Posterior Non-Fusion Stabilization. *SAS Journal. Winter 2008. 2:40–42. DOI: SASJ- 2007-0120-MIS*

## VISITING PROFESSOR

**University of California San Diego, Combined Orthopaedic and Neurosurgery Grand Rounds, San Diego, June 2007** – Posterior Non-Fusion Stabilization for Lumbar DDD

**University of Virginia Department of Spine Surgery Grand Rounds, Charlottesville, VA, August 2008** – Multilevel Percutaneous 360 Degree Fusion for Adult Degenerative Scoliosis; Direct Lateral Interbody Fusion; CD Longitude Multilevel Percutaneous Fixation

**University of South Florida, Department of Orthopedics & Sports Medicine Grand Rounds, Tampa, FL, December 2009** – The Technique as well as the Do's and Don'ts of Minimally Invasive Surgery for Spinal Deformity

**Tampa Bay Orthopaedic Society, Tampa, FL, December 2009** – Minimally Invasive Surgery for correction and fusion of Scoliosis

## **EDITORIAL AND REVIEW WORK**

1. European Spine Journal – Assistant Editorial Board, 2014
2. Spine Section Editor: Grays Anatomy 2013
3. Deputy Editor: SAS Journal
4. Peer Reviewer: SAS Journal
5. Ad-Hoc Reviewer: Spine, Spine Journal, JBJS
6. Reviewer – SAS/ISASS Annual Meeting, 2009, 2012, 2013
7. Reviewer – NASS Annual Meeting, 2009, 2012, 2013
8. Reviewer – SRS/IMAST, 2013
9. Reviewer – SMISS Annual Meeting, 2013, 2014

## **TEACHING CONFERENCES AND SYMPOSIA**

### **COURSE DIRECTOR/CO-DIRECTOR/CHAIRMAN**

1. Course Director, Fifth Annual Symposium on Current Concepts in Spinal Disorders, Las Vegas, NV, Feb 3-4, 2006.
2. Course Director, Sixth Annual Symposium on Current Concepts in Spinal Disorders, Las Vegas, NV, Mar 1-3, 2007
3. Chairman, Current Concepts in Spine, Los Angeles, CA, Dec 8, 2007
4. Course Director, Seventh Annual Symposium on Current Concepts in Spinal Disorders, Las Vegas, NV, Feb 1-3, 2008
5. Course Director, Eighth Annual Symposium on Current Concepts in Spinal Disorders, Las Vegas, NV, Jan 29-Feb 1, 2009
6. Course Co-Chairman, 4<sup>th</sup> Annual Course on Sharpening Your Surgery Skills, Burr Ridge, IL, May 15-16, 2009



7. Course Co-Chairman, Association of Presacral Spine Surgeons (APSS): Problems and solutions in adult scoliosis treatment: The role of Lumbosacral Fixation, New York, NY, January 2010
8. Course Co-Director, Ninth Annual Symposium on Current Concepts in Spinal Disorders, Las Vegas, NV, Feb. 2-4, 2010
9. Course Chairman, Association of Presacral Spine Surgeons (APSS): Adult Complex Spine Workshop: Current Concepts in Lumbosacral Fixation, Las Vegas, NV, June 2010
10. Course Co-Director, Tenth Annual Symposium on Current Concepts in Spinal Disorders, Las Vegas, NV, Feb. 3-5, 2011
11. Course Co-Director, 11th Annual Symposium on Current Concepts in Spinal Disorders, Las Vegas, NV, Feb. 2-4, 2012
12. Course Director, Deformity Course, Tampa, FL, January 25-26, 2013
13. Course Co-Director, 12th Annual Symposium on Current Concepts in Spinal Disorders, Las Vegas, NV, Jan 31- Feb. 2, 2013
14. Course Chairman, SMISS, Las Vegas, NV, November 1-3, 2013
15. Course Co-Director, 13th Annual Symposium on Current Concepts in Spinal Disorders, Las Vegas, NV, Jan 30- Feb. 1, 2014

#### **INVITED SPEAKER/FACULTY/MODERATOR**

1. **Emerging Technologies in Spinal Surgery, Washington DC, October 2002**  
 Minimal Access to Spine Surgery Gas Assisted Laproscopic ALIF  
 Panel Discussion Minimally Invasive Surgery
2. **Third Annual Symposium on Current Concepts in Spinal Disorders. La Quinta, CA, February 2004.**  
 Cantilever TLIF  
 Dynesys
3. **NASS Workshop on “Surgical Approaches and Techniques for the Lumbar Spine” St. Louis, Missouri, April 2004**  
 Open and Laproscopic Approaches for ALIF.
4. **Spine Technology Education Group. Los Cabos, August 2004.**  
 Dynesys
5. **NASS, Chicago, Illinois, October 2004.**  
 TLIF Workshop

6. **Non-Fusion Technologies/"Soft Restraints", Practical Anatomy & Surgical Education, St. Louis, Missouri, November 2004.**  
Posterior Interbody Fusion Techniques (Open PLIF and TLIF),
7. **AANA. Whistler, British Columbia, Canada, January 2005.**  
Minimally Invasive Lumbar Fusion/Posterior Lumbar Interbody Fusion
8. **72<sup>nd</sup> American Association of Orthopedic Surgeons (AAOS) Annual Meeting. Wash., D.C., Febr 2005.**  
Symposium: Anterior Thoracolumbar Spinal Surgery: Minimal and Maximally Invasive
9. **National Osteoporosis Foundation (NOF) 6<sup>th</sup> Int'l Symposium on Osteoporosis. Wash., DC, April 2005**  
Vertebroplasty and Kyphoplasty
10. **North American Spine Society (NASS) Spring Break 2005 - Spring into Motion. BalHarbour, FL, April 2005.**  
Dynesys
11. **Hands-on Cadaver Instructional Course, San Diego April 2005**  
Instructor XLIF Training Course  
Instructor Minimally Invasive TLIF Training Course
12. **Spine Trauma Study Group, New York, NY, April 2005**  
Advances in Kyphoplasty  
Alternatives to Cement Augmentation
13. **Posterior Dynamic Stabilization Instructional Course, Santa Monica, CA May 2005**  
Case Presentations Dynesys
14. **IMAST Annual Meeting, Banff, Canada, July 2005**  
Minimally Disruptive TLIF  
Percutaneous Stabilization of Thoracolumbar Fractures  
Kyphoplasty Workshop
15. **2<sup>nd</sup> Annual Innovative Techniques in Spine Surgery Symposium, Los Cabos, August 2005**  
Dynesys  
Instructor Kyphoplasty Workshop
16. **Loma Linda Dept of Orthopaedic Annual Meeting, Mammoth Lakes, CA September 2005**  
Posterior Dynamic Stabilization Dynesys
17. **Technologies in Spine Surgery, Washington DC, September 2005**  
XLIF
18. **NASS Annual Meeting, Philadelphia, September 2005**  
Instructor Dynesys Workshop
19. **American College of Rheumatology (ACR) National Meeting, San Diego, November 2005**  
Orthopaedic Symposium, Advances in Orthopaedic Surgery Vertebroplasty and Kyphoplasty

20. **Hands-on Cadaver Instructional Course, San Diego, December 2005**  
 XLIF Training Course Instructor  
 Minimally Invasive TLIF Training Course Instructor
21. **IOACON 2005, Bombay, India. December 2005**  
 Minimally Invasive Fusion Surgery  
 Lumbar Disc Herniations  
 Dynamic Non-Fusion Technology  
 Microdecompression for Spinal Stenosis  
 XLIF  
 Cantilever TLIF
22. **Spine Trauma Study Group (STSG) Meeting, Vancouver, January 2006**  
 MRI Standards in Spine Trauma
23. **Fifth Annual Symposium on Current Concepts in Spinal Disorders. Las Vegas, Nevada, February 2006.**  
 Dynesys: Dynamic Non-Fusion Stabilization  
 Posterior Lumbar Artificial Disc Devices  
 XLIF  
 Cadaver Workshop: MAST TLIF, Thoracic Pedicle Screws
24. **72<sup>nd</sup> American Association of Orthopedic Surgeons (AAOS) Annual Meeting. Chicago, March 2006**  
 Symposium: Anterior Thoracolumbar Spinal Surgery: Minimal and Maximally Invasive XLIF
25. **Scoliosis Association Meeting, La Jolla, April 2006**  
 Posterior Non-Fusion Stabilization Dynesys
26. **1<sup>st</sup> Spine Technology Summit, Montreal, Quebec, Canada, May 2006**  
 Faculty Panel Discussion on Posterior Dynamic Stabilization
27. **6<sup>th</sup> Spine Arthroplasty Society (SAS) Annual Meeting, Montreal, Quebec, Canada, May 2006**  
 Instructional Course Posterior Non-Fusion Technology
28. **Global Spine 2006, Las Vegas, June 2006**  
 The Role for Minimally Invasive Surgery in Spine Trauma  
 Cadaver Workshop MAST TLIF
29. **3rd Annual Innovative Techniques in Spine Surgery Symposium, Los Cabos, June 2006**  
 Dynesys  
 Lytic Spondylolisthesis How I do it  
 Neuromonitoring
30. **IMAST, Athens, Greece, July 2006**  
 Moderator Spondylolisthesis Symposium  
 Instructor ICL: Posterior Percutaneous Instrumentation for Spine Trauma
31. **NASS Annual Meeting, Seattle, September 2006**  
 Trans1 Workshop
32. **"Contemporary Surgical Techniques in Spine Trauma", Phoenix, October 2006**

The MRI & PLC: How it can Guide Treatment in T/L Trauma  
Debate: Cervical Fracture Dislocations

33. **Minimally Invasive Surgery of the Spine (SMISS) 2006, San Diego, November 2006**  
Moderator: Case Presentations  
Instructor: XLIF Workshop
34. **Dynesys Course and Workshop, Las Vegas, November 2006**  
Case Presentations Dynesys for DDD
35. **HSS Alumni Meeting, New York, November 2006**  
Debate: Posterior Non-Fusion Stabilization for DDD
36. **Globus Annual Sales Meeting, Tampa, January 2007**  
Posterior Non-Fusion Stabilization for DDD
37. **Spine Trauma Study Group (STSG) Meeting, Denver, January 2007**  
MRI to evaluate Cervical Discoligamentous Complex in Cervical Spine Trauma
38. **AANA. Whistler, British Columbia, Canada, January 2007.**  
Instructor Dynesys Workshop  
Faculty Adolescent Idiopathic Scoliosis Update
39. **One Spine Mtg Controversies in Spine Surgery, Cancun, February 2007**  
Faculty Debate: Cervical Arthroplasty is the standard of Care  
Faculty Debate: Fusion for Degenerative Spondylolisthesis  
Faculty Debate: Posterior Non-Fusion Stabilization for DDD  
Moderator & Instructor Minimally Invasive Techniques in Spine Trauma  
Moderator & Instructor Posterior Dynamic Stabilization
40. **73rd American Association of Orthopedic Surgeons (AAOS) Annual Meeting. San Diego, February 2007**  
Symposium: Anterior Thoracolumbar Spinal Surgery: Minimal and Maximally Invasive XLIF
41. **MAST Cadaver Workshop, Satellite Training Center, Marina Del Rey, CA. February 2007**  
MAST TLIF  
Thoracic Pedicle Screws  
Direct Lateral Interbody Fusion  
Posterior Dynamic Stabilization  
Multilevel Percutaneous Pedicle Screw Fixation
42. **6th Annual Symposium on Current Concepts in Spinal Disorders. Las Vegas, Nevada, March 2007.**  
Faculty Dynamic Non-Fusion Stabilization for Lumbar DDD  
Faculty Posterior Lumbar Artificial Disc Devices  
Faculty Lateral Artificial Disc Replacement  
Faculty Fusionless Scoliosis Surgery in the Pediatric Spine  
Faculty NeoDisc Cervical Artificial Disc Replacement  
Faculty Multilevel Percutaneous Pedicle Screw Fixation  
Moderator Posterior Dynamic Stabilization Symposium  
Instructor Cadaver Workshop: MAST TLIF, Thoracic Pedicle Screws

43. **San Diego Spine Meeting, San Diego, CA. March 2007**  
Faculty Posterior Non-Fusion Stabilization for Lumbar DDD
44. **2nd Spine Technology Summit, Berlin, Germany, May 2007**  
Faculty Panel Discussion on Posterior Dynamic Stabilization
45. **7th Spine Arthroplasty Society (SAS) Annual Meeting, Berlin, Germany, May 2007**  
Faculty Meet the Expert: Dynesys
46. **A Comprehensive Spine Review for Residents & Fellows, White Sulphur Springs, WV, May 2007**  
Faculty Pediatric Spinal Deformity  
Faculty Adult Spinal Deformity  
Faculty Congenital Spinal Disorders
47. **Spine Trauma Study Group (STSG) Meeting, Tampa, June 2007**  
Moderator Spinal Trauma Outcomes, breakout session
48. **City Wide San Diego Spine Conference, San Diego, June 2007**  
Guest Speaker Minimally Invasive Spine Surgery Update on the Science and Technology
49. **4th Annual Innovative Techniques in Spine Surgery Symposium, Los Cabos, June 2007**  
Faculty Round Table Discussion Dynesys  
Faculty Round Table, Vertebral Augmentation Kyphoplasty for Trauma  
Faculty Minimal Access Surgery, Nerve Surveillance for MIS applications
50. **IMAST (International Meeting for Advanced Spinal Technologies), Bahamas, July 2007**  
Moderator Cervical and Lumbar Arthroplasty  
Early Bird Round Table Case Discussion Panel Lumbar Spine Challenges  
Instructor: Advanced Topics In MAST, Multilevel Percutaneous Pedicle Screw Instrumentation for Degenerative Scoliosis  
Instructor AxiaLIF: Advanced Techniques and Indications in Complex Lumbar Spine
51. **World Spine IV: Fourth Interdisciplinary Congress on Spine Care, Istanbul, Turkey, July 2007**  
Faculty Symposium: Advances in the Treatment of Thoracolumbar Scoliotic Deformity, Minimally Invasive Posterior Correction Procedures  
Faculty Symposium: Minimally Invasive Spinal Surgery, Posterior Thoracolumbar Minimally Invasive Strategies
52. **SINCOL: SIMPOSIO INTERNACIONAL DE COLUNA, Rio De Janeiro, Brazil August 2007**  
Guest Speaker Cervical Disc Arthroplasty will be the Standard of Care in the Future  
Faculty Dynesys for degenerative disc disease  
Faculty Dynesys, Complications and How to avoid them  
Faculty PEMF for Cervical Spine Fusion, results of a prospective randomized trial
53. **Congress of Neurological Surgeons Workshop, San Diego, Sep 2007**  
Faculty CD Horizon Longitude Training,
54. **Congress of Neurological Surgeons Workshop, San Diego, Sep 2007**  
Faculty Minimally Invasive Multilevel Percutaneous Instrumentation for Trauma and Complex Deformity,

55. **The Leaders in Spine Surgery Series, Advanced Decision Making with Emphasis on Posterior Solutions, Las Vegas, Oct 2007**  
 Panel Lumbar and Cervical Degenerative case Discussions  
 Instructor Cadaver Workshop
56. **NASS Annual Meeting, Austin, October 2007**  
 Faculty: Trans1 Workshop L5-S1 Minimally Invasive Fusion at the End of Long Scoliosis Constructs
57. **Visiting Professor, China, November 2007**  
 L5-S1 Minimally Invasive Fusion at the End of Long Scoliosis Constructs, MAST, TLIF  
 Huashan Hospital, Shanghai, November 5, 2007  
 2nd Hospital of ZJ Medical School, Hangzhou, November 6, 2007  
 Zhongda Hospital, Nanjing, November 7, 2007
58. **Chinese Orthopedic Association Meeting, Zhengzhou, China, November 2007**  
 Key Note Speaker - Posterior Motion Segment Stabilization
59. **Minimally Invasive Surgery of the Spine Annual Meeting, San Diego, Nov. 2007**  
 Faculty Posterior Motion Segment
60. **Current Concepts in Spine Surgery, Los Angeles, December 2007**  
 Course Chair Posterior Dynamic Stabilization  
 Posterior Lumbar Disc Arthroplasty
61. **Visiting Professor, Apollo Hospital, Chennai, India, January 2008**  
 The State of Minimally Invasive Spine Surgery
62. **17<sup>th</sup> Annual Dr. Tom Lowe Spine Symposium: The Surgical Management of Spinal Disorders, Beaver Creek, January 2008**  
 Faculty Lumbar Degenerative Disc Disease Indications and Surgical Options  
 Faculty Lumbo-Sacral Fixation Challenges and Complications  
 Faculty Lumbar Degenerative Disorders Approach Options: MIS vs. Open  
 Faculty TL Trauma Challenges and Complications
63. **APSAS Annual Meeting, Seoul, Korea, January 2008**  
 Faculty Symposium Indications for Posterior Dynamic Stabilization  
 Free Paper Minimally Invasive Percutaneous Multilevel 360 degree Fusion for Lumbar Degenerative Scoliosis a Feasibility Study
64. **APEC Current Techniques in Advanced Spine Care, Memphis, January 2008**  
 Faculty MAST TLIF Overview  
 CD Horizon Longitude Multilevel Percutaneous Fixation  
 Direct Lateral Interbody Fusion Technique  
 Overview of Neuromonitoring
65. **Selby Spine Society Meeting, Park City, UT, January 2008**  
 Faculty Minimally Invasive Correction and Fusion for Adult Scoliosis
66. **Seventh Annual Symposium on Current Concepts in Spinal Disorders, Las Vegas, February 2008**  
 Course Chair  
 Faculty Multilevel Percutaneous Pedicle Fixation for Spine Trauma  
 Faculty Dynesys What Have We Learned?

Faculty Stabilimax NZ  
Faculty Multilevel Percutaneous 360 Degree Fusion for Adult Degenerative Scoliosis  
Faculty Cervical ADR Will Become the Standard of Care Cervical ADR Debates  
Moderator Lumbar ADR Debates: Reality & Controversy  
Instructor Saw Bones Workshop: Longitude Fusion System, Prestige Cervical Artificial Disc

**67. ONE Spine Controversies in Spine Surgery, Cancun, February 2008**

Faculty Cervical Best Treatment Options  
Aging Spine Options for Sustained Fixation and MIS Treatments  
The Lumbar Spine: Best Treatment Options

**68. Winter Spinal Clinics, Cranial and Spinal Surgery, Snow Mass, CO, February 2008**

Faculty Extreme Lateral Interbody Fusion (XLIF) for Scoliosis  
Minimally Invasive L5-S1 Fusion and Correction for Adult Scoliosis

**69. Minimally Invasive Deformity Course, Oakland CA, March 2008**

Faculty MIS TLIF  
Direct Lateral Interbody Fusion,  
CD Longitude Multilevel Percutaneous Fixation

**70. Stabilimax NZ Surgeon Training, Dallas, TX, April 2008**

Faculty Technique, Pearls & Tips, Case Presentation

**71. MAST Deformity Focus Group Meeting, Memphis, TN, April 2008**

Faculty Minimally Invasive Adult Degenerative Scoliosis  
Faculty MIS TLIF  
Direct Lateral Interbody Fusion,  
CD Longitude Multilevel Percutaneous Fixation

**72. Minimally Invasive Deformity Course, Denver, CO, April 2008**

Faculty MIS TLIF  
Direct Lateral Interbody Fusion,  
CD Longitude Multilevel Percutaneous Fixation

**73. Minimally Invasive Deformity Course, in conjunction with AANS Annual Meeting Chicago, IL , April 2008**

Faculty MIS TLIF  
Direct Lateral Interbody Fusion,  
CD Longitude Multilevel Percutaneous Fixation

**74. 3<sup>rd</sup> Spine Technology Summit, Miami, FL, May 2008**

Faculty Panel Discussion on Cervical Total Disc Replacement  
Panel Discussion on The Aging Patient Revolution in Spine Care  
Presenter Dynesys Dynamic Stabilization  
Presenter Triumph TDR

**75. 8th Spine Arthroplasty Society (SAS) Annual Meeting, Miami, FL, May 2008**

Faculty Moderator Innovative Technologies  
Presenter: Novel Minimally Invasive Percutaneous Multi-Level 360 Degree Fusion for Lumbar Degenerative Scoliosis Feasibility, Technique and Early Results  
Presenter: Dynamic Stabilization and Indications in Back Pain; Stabilimax NZ Clinical Inv. Meeting

- Presenter: Trans1 AxiaLIF. A Novel Fusion Technique. Instructional course presented for Trans1
76. **SRS/AAOS Current Trends & Treatment Methods in Pediatric and Adult Spinal Deformity, Dallas, TX, May 2008**  
Faculty Presenter: Multilevel Percutaneous 360 Degree Fusion for Adult Degenerative Scoliosis
  77. **1<sup>st</sup> World Congress of Minimally Invasive Spine Surgery and Techniques, Honolulu, HI, June 2008**  
Faculty Presenter: Pre-Course Discussion on Posterior Dynamic Stabilization and Dynesys  
Presenter: Minimally Invasive Deformity Correction  
Presenter: Symptomatic Adjacent Disease  
Presenter: Pedicle Based Dynamic Stabilization
  78. **5<sup>th</sup> Innovative Techniques in Spine Surgery, Los Cabos, Mexico, June 2008**  
Faculty Presenter: Posterior Non-Fusion Devices; Stabilimax NZ and Dynesys  
Presenter: Posterior Disc Replacement; Transforaminal Disc  
Presenter: Minimally Invasive Surgery; Nerve Surveillance for MIS applications
  79. **IMAST (International Meeting for Advanced Spinal Technologies), Hong Kong, July 2008**  
Faculty Moderator: Session #1 Cervical and Lumbar Arthroplasty Early Bird Round Table Case Discussion Panel Lumbar Spine Challenges  
Instructor: MAST, Multilevel Percutaneous Pedicle Screw Instrumentation for Degenerative Scoliosis  
Instructor: AxiaLIF: Advanced Techniques and Indications in Complex Lumbar Spine
  80. **Western Spine Symposium, San Diego, CA, August 2008**  
Faculty Moderator: Surgical Options for Low Back Pain  
Presenter: In 2010 what would you do?  
Presenter: Multilevel Percutaneous 360 Degree Fusion for Adult Degenerative Scoliosis
  81. **Minimally Invasive Deformity Course, St Louis, MO, August 2008**  
Faculty MIS TLIF,  
Direct Lateral Interbody Fusion,  
CD Longitude Multilevel Percutaneous Fixation
  82. **First Brazilian Congress of Minimally Invasive Spinal Surgery and Techniques, Gramado, Brazil Aug. 2008**  
Faculty Presenter: Surgical Treatment of Vertebral Compression Fractures  
Presenter: Multilevel Percutaneous 360 Degree Fusion for Adult Degenerative Scoliosis  
Debater: Degenerative Disease Lumbar II  
Presenter: Pedicle Based Stabilization What Have We Learned?
  83. **DIAM Clinical Investigators Meeting OUS Clinical Trial, Nice, France September 2008**  
Invited Speaker: US Experience DIAM vs. Microdecompression
  84. **1<sup>st</sup> Inaugural Association of Presacral Spine Surgeons Meeting, Las Vegas, NV, October 2008**  
Faculty: Presenter: AxiaLIF for Adult Deformity
  85. **NASS Annual Meeting, Toronto, October 2008**  
Faculty: Trans1 Workshop L5-S1 Minimally Invasive Fusion at the End of Long Scoliosis Constructs
  86. **Emerging Techniques and Technologies in Spine Surgery, Toronto, Canada, November 2008**  
Faculty: Trans1 Workshop L5-S1 Minimally Invasive Fusion at the End of Long Scoliosis Constructs



87. **Society of Minimally Invasive Spine Surgeons Annual Meeting, Las Vegas, NV, November 2008**  
Faculty: Multilevel Percutaneous 360 Degree Fusion for Scoliosis
88. **Minimally Invasive Deformity Course, Scottsdale, AZ, December 2008**  
Faculty MIS TLIF,  
Direct Lateral Interbody Fusion,  
CD Longitude Multilevel Percutaneous Fixation
89. **Presacral Fusion L5-1 Surgeon Training Course, New Orleans, LA, December 2008**  
Faculty Trans1 AxiaLIF
90. **18th Annual Dr. Tom Lowe Spine Symposium: The Surgical Management of Spinal Disorders, Beaver Creek, January 2009**  
Faculty Lumbar Degenerative Disc Disease Indications and Surgical Options  
Faculty Lumbo-Sacral Fixation Challenges and Complications  
Faculty Lumbar Degenerative Disorders Approach Options: MIS vs. Open  
Faculty TL Trauma Challenges and Complications
91. **Eighth Annual Symposium on Current Concepts in Spinal Disorders, Las Vegas, January 2009**  
Course Chair  
Faculty Multilevel Percutaneous Pedicle Fixation for Spine Trauma  
Faculty Dynesys What Have We Learned?  
Faculty Multilevel Percutaneous 360 Degree Fusion for Adult Degenerative Scoliosis  
Moderator Lumbar ADR Debates: Reality & Controversy
92. **Presacral Fusion L5-1 Surgeon Training Course, Park City, UT, February 2009**  
Moderator /Faculty Trans1 AxiaLIF
93. **Winter Spinal Clinics, Cranial and Spinal Surgery, Snow Mass, CO, February 2009**  
Faculty Minimally Invasive L5-S1 Fusion and Correction for Adult Deformity
94. **Minimally Invasive Deformity Course, Denver, CO, March 2009**  
Faculty MIS TLIF,  
Direct Lateral Interbody Fusion,  
CD Longitude Multilevel Percutaneous Fixation
95. **Preservation of Motion in the Spine, Duck Keys, FL, April 2009**  
Faculty Preservation of Motion in Lumbar spine
96. **Spine Arthroplasty Society (SAS) Annual Meeting, London, UK, April 2009**  
Faculty Master Techniques in Minimally Invasive Spine Surgery; MIS Radiographic Anatomy.  
Moderator Percutaneous Techniques
97. **WENMISS Kota Kinabaul, Malaysia, May 21-23, 2009**  
Faculty: Rationale and Methods of Minimally Invasive Spine Surgery in Treatment of Spinal Deformity  
Fusion of L5/S1 using AXILIF technique  
Overview of Current Methods of Diagnosis of Disc Degeneration and Low Back Pain  
Scoliosis – Case Presentation  
Percutaneous Stabilization and Selective Fusion for Ankylosing Spondylitis and DISH

Rationale of AXILIF Concept – Overview and Results  
Minimally Invasive Posterior Pedicle Based Non-Fusion Stabilization

98. **4<sup>th</sup> Annual Course: Sharpening Your Spine Surgery Skills, Burr Ridge, IL, May 15-16, 2009**  
Course Co-Chairman  
Moderator: Lumbar Spine: Minimally Invasive Adult Degenerative and Deformity Correction  
Faculty: Current and Emerging Minimally Invasive Posterior Techniques  
Surgical Video: Lumbar Percutaneous Screw Placement
99. **IMAST (International Meeting for Advanced Spinal Technologies), Vienna, Austria, July 2009**  
Faculty Anterior Surgery for Adult Deformities: How do Lateral Approaches Change our Treatment Strategies in this Population?
100. **SINCOL: SIMPOSIO INTERNACIONAL DE COLUNA, Rio De Janeiro, Brazil July 2009**  
Faculty: Minimally Invasive Fusion of L5-S1 at the end of long fusions.  
Minimally Invasive Correction of Scoliosis  
Posterior Non-fusion stabilization What we know today  
Kyphoplasty / Vertebroplasty The differences and result
101. **Complex Spine Study Group Meeting (CSSG), Washington DC, August 7, 2009**  
Faculty: MIS Deformity Applications
102. **Presacral Fusion L5-1 Surgeon Training Course, Indianapolis, IN, September 2009**  
Faculty Trans1 AxiaLIF
103. **MAST Direct Lateral Interbody Fusion Technique Course, Denver, CO, September 2009**  
Faculty Lateral Anatomy and Physiology Review
104. **2<sup>nd</sup> Annual Symposium Association of Presacral Spine Surgeons, Las Vegas, October 2009**  
Faculty Clinical Results of 18 Month Deformity Study
105. **Annual Meeting of the Society for Minimally Invasive Spine Surgery, Las Vegas, October, 2009**  
Faculty Technology Forum: Lumbar Spinal Stenosis Treatment Options  
Presentation: Direct Lateral Interbody Fusion Technique
106. **6<sup>th</sup> Annual Meeting Innovative Techniques in Spine Surgery, Scottsdale, AZ, October 2009**  
Faculty Posterior dynamic stabilization: Indications and Results  
Oxygenated Scaffolds  
MIS Applications for Trauma  
Moderator MIS Round Table Discussion / Faculty AxiaLIF Clinical Results
107. **NASS 24<sup>th</sup> Annual Meeting, San Francisco, CA, November 2009**  
Faculty Advances in the Surgical Treatment of Acute Spine Trauma Course:  
Minimally Invasive Stabilization of TL Fractures  
Critical Concepts in Adult Deformity Surgery Course: Minimally Invasive Deformity Correction: Anterior and/or Posterior Approaches  
DLIF Workshop  
Trans1 Workshop

108. **Complex Spine Study Group (CSSG) San Diego, CA, January 2010**  
Faculty Debate: MIS vs. Open Procedure for Adolescent Scoliosis
109. **Association of Presacral Spine Surgeons (APSS): Problems and solutions in adult scoliosis treatment: The role of Lumbosacral Fixation, New York, NY, January 2010**  
Faculty Clinical Data Presentation  
Faculty Clinical Data Panel Discussion
110. **MAST Direct Lateral Interbody Fusion Technique Course, Scottsdale, AZ, January 2010**  
Faculty Lateral Anatomy and Physiology Review
111. **Ninth Annual Symposium on Current Concepts in Spinal Disorders, Las Vegas, February 2010**  
Course Co-Chair  
Moderator Minimally Invasive Innovative Technologies  
Faculty MIS for Spine Trauma  
Minimally Invasive Fixation in AIS/MIS Scoliosis Surgery: It is possible?  
Anatomical Facet Replacement System  
X-Stop  
Stabilimax NZ
112. **4th Annual Advances in Neurology and Neurosurgery Symposium, Marina Del Rey, CA, Febr, 2010**  
Faculty ACDF vs. Disc Arthroplasty
113. **Presacral Fusion L5-1 Surgeon Training Course, San Diego, CA, March 2010**  
Faculty Transl AxiaLIF
114. **Preservation of Motion in the Spine; Duck Keys, FL, April 2010**  
Faculty Experience with Stabilimax a posterior dynamic stabilization system  
ACADIA Facet Replacement Results  
MIS Correction of Scoliosis
115. **10<sup>th</sup> Annual Global Symposium on Motion Preservation Technology (SAS), New Orleans, LA, April 2010**  
Moderator MIS Case Presentation/Discussion
116. **3<sup>rd</sup> Annual Dubai Spine Masters, Dubai, UAE, May 2010**  
Faculty Percutaneous MIS Fixation Multilevel Introduction  
Trans Sacral Screw Fixation
117. **2<sup>nd</sup> World Congress of Minimally Invasive Spinal Surgery and Techniques (WCMISST); Las Vegas, NV, June 2010**  
Faculty MISS Deformity Correction, Posterior Approach  
Faculty Dynamic Stabilization, Pedicle Based
118. **Association of Presacral Spine Surgeons (APSS): Adult Complex Spine Workshop: Current Concepts in Lumbosacral Fixation, Las Vegas, NV, June 2010**  
Faculty MIS Complex Spine Clinical Data  
Case Presentation Discussion

119. **7th Annual Innovative Techniques in Spine Surgery Symposium, Los Cabos, Mexico, June 2010**  
 Faculty Clinical Performance: Stabilimax Pedicle Based Motion Preservation System  
 MIS Applications for Trauma  
 AxiaLIF: Clinical Results
120. **ONE Spine: Controversies in Spine Surgery, Bahamas, June 2010**  
 Faculty: Deformity Challenges Panel  
 MIS L5-S1 Fusion  
 Lumbar Spine, Best treatment options: Case Panel  
 Use of Minimally Invasive Correction of Adult Degenerative Lumbar Scoliosis  
 The Aging Spine: Case Panel
121. **IMAST (International Meeting for Advanced Spinal Technologies), Toronto, Canada, July 2010**  
 Faculty: Adult Deformity: Less Invasive Paracoccygeal Approaches and the use of Navigation and Percutaneous  
 Pedicle Screw systems in the treatment of adult deformity.  
 Approaches to Degenerative Disc Disease: Non-operative, Fusion, Arthroplasty, Nucleus Replacement  
 Lumbar Degenerative Panel  
 Workshop: Decision Making relative to Extension to the Sacrum Pelvis: Hands On Demonstration  
 Workshop: The Role of Minimally Invasive Surgery in Adult Degenerative Deformity: Hands On Demo  
 DLIF workshop
122. **NASS (North American Spine Society) 25<sup>th</sup> Annual Meeting, Orlando, FL, October 2010**  
 Moderator: Lumbar Total Disc Arthroplasty  
 Faculty: Innovations in Minimally Invasive Surgery for the Complex Spine: Workshop
123. **Annual Meeting of the Society for Minimally Invasive Spine Surgery (SMISS); Miami, FL , October 2010**  
 Faculty: Indications and Results for MIS Surgical Approach (Single Approach Posterior or Lateral vs. Combined) for Adult Scoliosis  
 Scoliosis Panel discussion  
 DLIF workshop
124. **Minimally Invasive Spinal Surgery and Navigation Hands-on Symposium, Weill-Cornell Medical College, New York, NY Dec. 2-4, 2010**  
 Faculty Advanced MIS: Patient selection and principles for deformity correction  
 Surgical demonstration  
 AxiaLIF and XLIF challenges: How I do it.  
 Future of MIS: Panel Discussion
125. **Spine on the Mountain: Innovation Meets Practice, Vail, CO, January 27-30, 2011**  
 Faculty: Deformity at the Junctions: Panel Discussion  
 MIS for Spinal Deformity: Hype or Reality?  
 MIS Complications of Neurologic Decompression: Adequacy of Decompression,

Spinal Fluid Leaks, and Neurologic Injury

126. **Tenth Annual Symposium on Current Concepts in Spinal Disorders, Las Vegas, February 2011**  
Course Co-Chair  
Moderator: Frontier Technologies  
Faculty: Complications and Controversies: Surgery with New Technology Case Presentations  
Deformity: Surgery with New Technology Case Presentations
127. **Winter Spinal Clinics, Cranial and Spinal Surgery, Snow Mass, CO, Febr 27-Mar 1, 2011**  
Faculty: Controversies in Lumbar Spine Surgery: Innovative Technologies
128. **Current Solutions in Spine Surgery, Duck Keys, FL, Mar 30-Apr 1, 2011**  
Moderator: Updates  
Faculty: Case Presentation  
Anchoring Long Constructs with AxiaLIF
129. **Presacral Fusion L5-1 Surgeon Training Course, San Francisco, CA, April 9, 2011**  
Faculty Transl AxiaLIF
130. **Int'l Society for the Advancement of Spine Surgery (ISASS/SAS) Meeting, Las Vegas, NV April, 2011**  
Faculty: Work shop: MAST Correction Technique
131. **Spine Technology Summit, Napa, CA, May 11, 2011**  
Faculty: Personalized Stem Cell Therapy
132. **Innovative Techniques in Spine Surgery: 2011, Cabo, June 24-25, 2011**  
Faculty: Surgical Techniques and pearls: MIS Applications for Trauma  
Techniques and Complications: Pre-Sacral for L5-S1 Isthmic Spondylolisthesis
133. **18<sup>th</sup> IMAST (International Meeting for Advanced Spinal Technologies), Copenhagen, Denmark, July 2011**  
Faculty: Adult Deformity: Minimally Invasive Lateral and Trans-sacral Techniques for Deformity Correction  
MIS: Optimal Treatment of Significant (50-Degree) Thoracolumbar Scoliosis in 50-Year-Old
134. **Hibbs Spine Society, Louisville, KY, September 2011**  
Faculty Can MIS Correction of Spinal deformity avoid the need for Routine Osteotomies?
135. **SRS Annual meeting (Scoliosis Research Society), Louisville, KY, September 2011**  
Workshop Minimally Invasive Lumbosacral Fusion for Scoliosis Constructs
136. **Annual Meeting of the Society for Minimally Invasive Spine Surgery (SMISS); Las Vegas, NV, Oct 2011**  
Lab: Fundamentals of Lateral MIS  
Technology Forum: MIS Advanced Complex Spine Techniques  
Round Table: Deformity  
Moderator: Deformity and Trauma  
Faculty: New Technology and Advanced Techniques

137. **Decision Making Strategies for Complex Degenerative Conditions Course; New Orleans, LA, October 2011**  
 Faculty Minimally Invasive Options: Treatment options, Surgical Pearls on Procedures
138. **NASS (North American Spine Society) 26<sup>th</sup> Annual Meeting, Chicago, IL, November 2011**  
 Lab Course: Minimally Invasive Spine Surgery Hands-on Course  
 Faculty MIS: Complication Review and Avoidance  
 Trauma: Thoracolumbar Fractures & Dislocations: Indications for Open vs. MIS
139. **Spine Fellow Live Course, IEP; Miami, FL. November 18, 2011**  
 Moderator Deformity and Trauma  
 Faculty Role of Motion Preserving Reconstruction  
 Degenerative Lumbar Scoliosis
140. **21<sup>st</sup> Annual Tom Lowe Spine Symposium: The surgical Management of Spinal Disorders, Beaver Creek, CO Jan 13-16, 2012;**  
 Faculty What is the role of MIS for deformity now?  
 When should we do traditional method vs. MIS?  
 What is the 2-5 year follow-up with rigorous assessment of implant complications and non-union?  
 Faculty Minimally invasive surgery in the elderly: Increasing safety or increasing risks?  
 Panel Adult Deformity I, Adult Deformity II, MIS techniques, Aging Spine
141. **Spine on the Mountain: Innovation Meets Practice, Vail, CO, January, 2012**  
 Faculty MIS for Spinal Deformity: Can We Get Optimal Sagittal Plane Correction?  
 Lumbar Multilevel Degeneration  
 When Does a Lumbar Degenerative Case Become a Deformity?  
 Adult Deformity
142. **11th Annual Symposium on Current Concepts in Spinal Disorders, Las Vegas, Febr. 2012**  
 Course Co-Chair  
 Moderator: Frontier Technologies  
 Faculty: Deformity: Minimally Invasive Correction of Severe (>50%) Thoracolumbar Scoliosis
143. **Winter Spinal Clinics, Cranial and Spinal Surgery, Snow Mass, CO, February, 2012**  
 Faculty: Minimally Invasive Lumbosacral Fixation with AxiaLIF at the Bottom of Long Constructs in Adult Spinal Deformity
144. **ISASS 12 (Int'l Society for the Advancement of Spine Surgery), Barcelona, Spain, March, 2012**  
 Moderator: Minimally Invasive Surgery
145. **Current Solutions in Spine Surgery, Duck Keys, FL, April 17-21, 2012**  
 Faculty: Minimally Invasive AxiaLIF for Anterior Column Support in Long Segment Constructs: Minimum 1 year Functional and Clinical Outcomes
146. **Dubai Spine Masters: Complex Spine Reconstruction & Deformity Management Strategies, Dubai, UAE. May 6-8 2012**  
 Moderator: Adult Deformity MIS Techniques  
 Moderator: Case Presentation: Minimally Invasive Technique for Adult Deformity Case  
 Faculty: Minimally Invasive Techniques for Adult Deformity Correction with Focus on Direct Lateral Techniques

Faculty: Management of Degenerative Spinal Stenosis and Spondylolisthesis: Role for MIS  
Debate: Best Treatment for Degenerative Spondylolisthesis Is Interbody Fusion  
Debate: Moderate Deg. Scoliosis in an Elderly Patient. The Safest and Best Procedure Is Minimally Invasive  
Video Case presentation: MIS Fusion Techniques  
Panel: Ideal Image Guidance Case. Is Image Guidance Really Better?

**147. SMISS Course: Advances in MIS, Miami, FL, May 19, 2012**

Faculty: AxiaLIF: Indications, technique and outcomes  
Lab: AxiaLIF

**148. Innovative Techniques in Spine Surgery: Carlsbad, CA, June 21-23, 2012**

Faculty: AxiaLIF+: The next generation of lumbosacral fusion  
Faculty: Minimally invasive approaches to spinal trauma  
Faculty: VEO Lateral Access System: Seeing is Believing  
Debate: Surgical Management of symptomatic lumbar degenerative scoliosis: Open full-curve deformity correction is optimum;

**149. AANS Course: Minimally Invasive Lateral Interbody Fusion, Chicago, IL June 29-30, 2012**

Faculty: Minimally Invasive Lateral Retroperitoneal Transpoas Approach: Complications and Avoidance

**150. 19<sup>th</sup> IMAST (International Meeting for Advanced Spinal Technologies), Istanbul, Turkey, July 2012**

Faculty: Minimally Invasive Lateral and Trans-Sacral Techniques for Deformity Correction  
Debate: Optimal Treatment of Moderate (30-Degree) Thoracolumbar Scoliosis with Stenosis in 70-Year-Old  
Workshop: MIS Approaches for the Complex Spine

**151. Spine Across the Sea, Kauai, Hawaii, July 29-Aug 2, 2012**

Moderator: Best Poster Presentations  
Faculty: Minimally Invasive Lateral Access to the Lumbar Spine

**152. Scoliosis Research Society (SRS) 47<sup>th</sup> Annual Meeting, Chicago Sept 5-8, 2012**

Faculty: Direct lateral approaches in lumbar scoliosis  
MIS Pelvic fixation techniques  
Degenerative lumbar curve requiring decompression and interbody fixation

**153. Annual Meeting of the Society for Min. Invasive Spine Surgery (SMISS), Miami, FL, Sept , 2012**

Debate: MIS Deformity; Fixation to Pelvis: MIS Pre-sacral Approach is Best Option  
Workshop:

**154. NASS (North American Spine Society) 27<sup>th</sup> Annual Meeting, Dallas, TX, October 24-27, 2012**

Faculty: Minimally Invasive Spine Surgery Hands-on Course: LLIF

**155. Spine Fellow Live Course, IEP; San Diego, CA. November 16-18, 2012**

Faculty: MIS Approaches to Deformity and Trauma  
Low Back Pain with DDD: Role of Motion Preserving Reconstruction

**156. Deformity Course , Tampa, FL, January 25-26, 2013**

Course Director  
Faculty: Surgery workshop

157. **12<sup>th</sup> Annual Symposium on Current Concepts in Spinal Disorders, Las Vegas, NV, Jan 31-Febr 2 2013**  
Course Co-Chair  
Moderator: Controversies in Spine Surgery  
Faculty: The Challenges and Controversies in MIS Correction of Spinal Deformity
158. **Winter Clinics, Cranial and Spinal Surgery, Snow Mass, CO Febr 24-26, 2013,**  
Faculty: Complications: MIS Lateral Transpsoas Approach Complications and Avoidance  
Faculty: Emerging Treatments: Circumferential MIS Strategies for the Correction of Moderate to Severe Adult Scoliosis (>50 degrees)
159. **ISASS (Int'l Society for the Advancement of Spine Surgery) Annual meeting, Vancouver, Canada, April 3-5, 2013**  
Moderator: Cervical Arthroplasty - Oral Posters
160. **LSRS – Lumbar Spine Research Society 6th annual meeting Chicago, IL, April 11-12, 2013**  
Faculty: MIS for Deformity Correction
161. **Ganga Hospital Operative course, Coimbatore, India, April 25-28, 2013**  
Faculty: Surgery workshop
162. **SMISS Cadaver Lab, Miami, FL, May 18, 2013**  
Faculty: Surgery workshop
163. **Deformity Correction Course , Tampa, FL, June 7, 2013**  
Faculty: Surgery workshop
164. **Spine Technology and Educational Group Organization 10th Annual Symposium “State of Spine Surgery: A Think Tank”, Cabo, Mexico, June 20-22, 2013**  
Panelist in case presentations  
Faculty: MIS treatment of degenerative scoliosis
165. **AOSpine Master Deformity Course, Dubai, UAE, September 28-30, 2013**  
Lectures in:  
Adult Scoliosis – Case Presentation  
Minimally Invasive TLIF  
Direct Lateral Interbody Fusion  
MIS Screw Rod Placement  
Developmental Kyphosis  
Pediatric Scoliosis – Case Presentation  
Spinal-Pelvis Fixation Update  
Degenerative Scoliosis Sagittal and Coronal Balance  
Severe Adult Idiopathic Scoliosis – Case Presentation  
VCR for Severe Scoliosis  
Is Anterior Surgery Necessary?
166. **AOSpine Webinar; Minimally Invasive Spinal Surgery and Navigation – MIS Basics, Oct 2, 2013**  
Faculty: The Evidence - MIS Fusion Comparative Effectiveness



Faculty: MIS – Case Presentation

**167. 2013 Midwest Deformity Peer to Peer Course, Chicago, IL, October 25-26, 2013**

Panel: Pseudoarthrosis in Adult Deformity: How I have dealt with it.

Panel: De-Rotation is AIS: How I do it

Panel: Sacro-Pelvic Fixation: What went wrong?

Faculty: Adult Idiopathic Scoliosis – Case Presentation

Faculty: Worst Case – Case Presentation

**168. Annual Meeting of the Society for Min. Invasive Spine Surgery (SMISS), Las Vegas, NV, Oct 2013**

Course Director

Faculty: Limitations of MIS Techniques for Correction of Spinal Deformity

Faculty: Complications and Reality of MIS Lateral Approach

**169. WENMISS, New Delhi, India, November 7, 2013**

Faculty: DLIF complications

Faculty: MIS strategies for Degenerative Scoliosis

Faculty: DLIF Technique

**170. 7<sup>th</sup> Annual MIS and Navigation Course, NYCMIS Course, New York, NY, Dec 12-14, 2013**

Faculty: Long Term MIS Results for Scoliosis

Faculty: Trans Sacral AxiaLIF Fusion

Panel: MIS debate

**171. 23<sup>rd</sup> Annual Tom Lowe Spine Symposium: The surgical Management of Spinal Disorders, Beaver Creek, CO Jan 17-20,2014**

Workshop: Motion Preservation vs. Fusion for Spinal Stenosis

**172. 13<sup>th</sup> Annual Symposium on Current Concepts in Spinal Disorders, Las Vegas, NV, Jan 30-Feb 1, 2014**

Course Co-Director

Moderator: Minimally Invasive Surgeries & New Technologies

Moderator: Lumbar Spine and Deformities

Faculty: Limitations and Ceiling Effects of MIS Deformity Correction

**173. 2014 Winter Clinics, Cranial and Spinal Surgery, Snow Mass, CO, Febr 23-24, 2014,**

Faculty: MIS Correction of Spinal Deformity: Long Term Results (2 to 5 Years)

**174. 1<sup>st</sup> Annual SMISS Contemporary Techniques for Minimally Invasive Spinal Surgery, St.Louis, MO, Mar 28-29, 2014**

Faculty: MIS for Selected Deformity Applications

Faculty: Workshop

**175. Current Solutions in Spine Surgery, Duck Key, FL, April 2-5, 2014**

Faculty: Complications for MIS

Faculty: Surgical Strategies for corrections of Scoliosis – Long Term Outcomes

Faculty: Management of Degenerative Spondylolisthesis and Spinal Stenosis – Role of MIS

**176. ISASS (Int'l Society for the Advancement of Spine Surgery) Annual meeting, Miami, FL, Apr 30-May 2, 2014**

Faculty: Adult Scoliosis MIS – case presentation

177. **PUMCH Annual Spine Conference, Beijing, China, May 23-25, 2014**  
 Key Note Speaker  
 Faculty: Evolution of MIS Strategies for Correction of Adult Spinal Deformity – 10 year experience  
 Faculty: Complications and Avoidance Strategies in MIS Correction of Spinal Deformity
178. **Spine Technology and Educational Group Organization 11<sup>th</sup> Annual Symposium State of Spine Surgery: A Think Tank, Cabo, Mexico, June 26-28, 2014**  
 Faculty: MIS Lateral Approach; L3-4-5 stenosis with mild scoliosis, Lateral anatomic plexus constrains  
 Faculty: Spinal Sagittal Balance: Role of anterior surgery in deformity surgery
179. **21<sup>st</sup> IMAST (International Meeting for Advanced Spinal Technologies), Valencia, Spain, July 16-19, 2014**  
 Workshop: Minimizing Post-Op Complications and Maximizing Correction in Lateral Procedures
180. **Annual Meeting of the Society for Min. Invasive Spine Surgery (SMISS), Miami, FL, Sept 19-21, 2014**  
 Moderator: Applying MISS in Treating Various Patient Types: Patients with Deformities  
 Moderator: Controversies – Free Papers  
 Workshop: Clinical and Economic Justification for Treating Elderly Adult Deformity with MIS
181. **Castellvi Spine Meeting, Duck Keys, FL, May 2015**  
 Debate: L4-5 Spondylolisthesis discussing Lateral Transpsoas vs TLIF.
182. **Spine Technology and Educational Group Organization, 12<sup>th</sup> Annual Symposium, Los Cabos, Mexico, June 18-20, 2015**  
 Faculty: Cervicothoracic Deformity – Do MIS techniques have a role?  
 Faculty: Discussion-MIS: What I've Learned and What the Future Holds.  
 Moderator: Case-Based Lecture: Rod bending: Art or science?
183. **Sixth annual ONE Spine Residents & Fellows Course, Seattle, WA, August 14-16, 2015**  
 Faculty: Minimally Invasive Surgery for Spine Fractures
184. **Annual Meeting of the North American Spine Society (NASS), Chicago, IL, October 14-17, 2015**  
 Faculty: Hands-On Course: Minimally Invasive Spine Surgery; Percutaneous Fixation Techniques: Pedicle, Cortical, Iliac
185. **MISSICON – Minimally Invasive Spine Surgeons of India**  
 Faculty: Live Surgery – Demonstration of MIS-TLIF  
 Faculty: Posterior MIS stabilization techniques in TL trauma  
 Faculty: My Best MIS Case & My Worst MIS Case  
 Faculty: The evolution of minimally invasive spine surgery in the treatment of adult spine deformity – A ten-year experience.  
 Faculty: Complications and avoidance strategies to prioritize safety in the MIS treatment of adult spinal deformity.  
 Faculty: Managing instrumentation failure in MIS  
 Debate: L4-5 Stenosis with Spondylolisthesis
186. **International Forum of Minimally Invasive Spine Surgery, Shanghai, China, October 30 – November 1, 2015**  
 Faculty: Current status of MISS for degenerative scoliosis.

Faculty: Case Discussion: Tips and Tricks – Most Challenging Cases for MISS.  
Faculty: Case Discussion: Worst Experience of MISS – complications and management

187. **Annual Meeting of the Society for Minimally Invasive Spine Surgery (SMISS), Las Vegas, NV, November 5-7, 2015**  
Debate: MISS vs. Open for Spinal Deformity  
Faculty: Discussion Panel, Expert Case Discussions; Deformity and Revision
188. **9<sup>th</sup> New York City Minimally Invasive Spine and Navigation Course: “Case-Based and Hand-On”, New York, NY, December 17-19, 2015**  
Faculty: Step-by-Step: OLIF

## **INTRAMURAL LECTURES AND CONFERENCES**

1. Current update and concepts in burst fractures. Cedars-Sinai Medical Center, Institute for Spinal Disorders, Spine Conference, Los Angeles, CA, June 4, 2003.
2. Dynamic stabilization: a conceptual revolution. Cedars-Sinai Medical Center, Institute for Spinal Disorders, Spine Conference, Los Angeles, CA, June 18, 2003.
3. Stabilization for degenerative disc disease: fusion and non-fusion techniques. Cedars-Sinai Medical Center, Institute for Spinal Disorders, Back Pain Conference, Los Angeles, CA, June 14, 2003.
4. Thoracic pedicle screws. Cedars-Sinai Medical Center, Institute for Spinal Disorders, Spine Conference, Los Angeles, CA, March 24, 2004.
5. Non-fusion spinal instrumentation technologies. Cedars-Sinai Medical Center, Institute for Spinal Disorders, Spine Conference, Los Angeles, CA, May 12, 2004.
6. Motion preservation in spinal surgery. Cedars-Sinai Medical Center, Institute for Spinal Disorders, Spine Conference, Los Angeles, CA, January 26, 2005.
7. Posterior non-fusion stabilization with Dynesys: beyond the IDE study. Cedars-Sinai Medical Center, Institute for Spinal Disorders, Spine Conference, Los Angeles, CA, August 17, 2005.
8. Beat back pain and save your spinal motion: surgery without fusion. Cedars-Sinai Medical Center, Institute for Spinal Disorders, Back Pain Conference, Los Angeles, CA, August 20, 2005.
9. Beat back pain and save your spinal motion: surgery without fusion. Cedars-Sinai Medical Center, Institute for Spinal Disorders, Back Pain Conference, Las Vegas, NV. February 2006.
10. Office Orthopaedics: The Essentials of Non-Operative Musculoskeletal Care: Acute Back Pain, Cedars-Sinai Medical Center, Institute for Spinal Disorders, Los Angeles, CA, May 20, 2006.
11. Posterior Non-Fusion Stabilization: Cedars-Sinai Medical Center, Institute for Spinal Disorders, Spine

Conference Grand Rounds, Los Angeles, CA, October 18, 2006.

12. Baron, EM, Anand, N. Future Concepts in Artificial Disc Treatment of Cervical Spine Disorders. Cervical Spine Community Conference. Cedars Sinai Medical Center. Los Angeles, CA. February 3, 2007
13. Beat back pain and save your spinal motion: surgery without fusion. Cedars-Sinai Medical Center, Institute for Spinal Disorders, Back Pain Conference, Las Vegas, NV. March 2007.
14. Beat back pain and save your spinal motion: surgery without fusion. Cedars-Sinai Medical Center, Institute for Spinal Disorders, Back Pain Conference, Los Angeles, CA. March 2007.
15. Spine Trauma in Ankylosing Spondylitis: Medical and Surgical Approach to Spine Disease and Spine Deformity in Ankylosing Spondylitis. Cedars-Sinai Medical Center, Institute for Spinal Disorders, Los Angeles, CA. March 2007
16. The State of Minimally Invasive Spine Surgery Today: Cedars-Sinai Medical Center, Institute for Spinal Disorders, Spine Conference Grand Rounds, Los Angeles, CA, April 25, 2007.
17. Posterior Non-Fusion Stabilization for DDD – An update: Cedars-Sinai Medical Center, Institute for Spinal Disorders, Spine Conference Grand Rounds, Los Angeles, CA, May, 2007.
18. Baron, EM, Anand, N. New Developments in Spine Surgery. Temple Community Hospital, Los Angeles, CA. Tuesday, May 15, 2007.
19. Baron, EM, Anand, N. Extreme Lateral Interbody Fusion. Nursing Staff Presentation. Cedars Sinai Medical Center. Los Angeles, California. Tuesday, June 26, 2007
20. The State of Minimally Invasive Spine Surgery Today: Cedars-Sinai Medical Center, Research Dept Grand Rounds, Los Angeles, CA, July, 2007.
21. Baron, EM, Anand, N. Minimally Invasive Spinal Surgery. Sherman Oaks Hospital & Health Center, Sherman Oaks, California. Thursday, July 26, 2007
22. Baron, EM, Anand, N. Future Concepts in Artificial Disc Treatment of Cervical Spine Disorders. Cervical Spine Community Conference. Cedars Sinai Medical Center. Los Angeles, CA. Saturday, Febr. 3, 2007
23. Baron, EM, Anand, N. New Developments in Spine Surgery. Temple Community Hospital, Los Angeles, CA. Tuesday, May 15, 2007.
24. Baron, EM, Anand, N. Extreme Lateral Interbody Fusion. Nursing Staff Presentation. Cedars Sinai Medical Center. Los Angeles, CA. Tuesday, June 26, 2007
25. Baron, EM, Anand, N. Minimally Invasive Spinal Surgery. Sherman Oaks Hospital & Health Center, Sherman Oaks, California. Thursday, July 26, 2007
26. Baron, EM, Anand, N. X-STOP® Interspinous Process Decompression (IPD®) System. Primary Care Physician Informational Lecture, Beverly Hills, CA Thursday, September 20, 2007.
27. Baron, EM, Anand, N. Cement Augmentation for Osteoporotic Fractures –Kyphoplasty versus Vertebroplasty. Primary Care Physician Informational Lecture, Beverly Hills, CA Thursday, September 20, 2007

28. Thoracic pedicle screws. Cedars-Sinai Medical Center, Institute for Spinal Disorders, Spine Conference, Los Angeles, CA, August 1, 2007
29. Baron, EM, Anand, N. Atypical Diagnoses in the Cervical Spine that should NOT Be Missed. 2008 Interdisciplinary Symposium Cervical Spine Trauma. Presented by Southern California University of Health Sciences and Diagnostic and Interventional Spinal Care. Southern California University of Health Sciences Performing Arts Center, Whittier, CA. Sunday, February 24, 2008.
30. Baron, EM, Anand, N. Minimally Invasive Percutaneous Multilevel 360 Degree Fusion for Deg. Scoliosis - Feasibility Study. Cervical Spine Community Lecture. Cedars Sinai Medical Center. Los Angeles, California. Saturday, March 15, 2008
31. Anand, N. Baron, EM, Stabilization of the Spine without Fusion. Spine Community Lecture. Cedars Sinai Medical Center. Los Angeles, CA. Saturday, March 15, 2008
32. Rivadeneira, D., Anand, N., Minimally Invasive Surgery L5-S1 Fusion: A Spine and Colorectal Perspective; Cedars-Sinai Spine Center, Spine Conference, Los Angeles, CA, September 23, 2009
33. Anand, N, Baron EM, Minimally Invasive Surgery: Correction of Adult Scoliosis; Cedars-Sinai Spine Center, Spine Conference, Los Angeles, CA, November 18, 2009
34. Anand, N., Baron, EM., Zarembinski, CJ. Latest Advances in Spine Care; Cedars-Sinai Medical Center, Community Lecture, Los Angeles, CA, Dec 8th, 2009
35. Anand, N., Anatomy and Pathology of Scoliosis & Current Treatments; LAUSD District 8 School Nurses Lecture, Gardena, CA, February 2010
36. Anand, N., Minimally Invasive Spinal Surgery – State of the Art; T.N. Medical College reunion, New York, NY, August 2010
37. Anand, N., Kahwaty, S., Scoliosis Screening and Education; Scoliosis Association Community Outreach. Mission Viejo, CA, October 8<sup>th</sup>, 2011
38. Anand, N.; Minimally Invasive Surgery for Correction of Scoliosis, 10 year experience, Cedars-Sinai Spine Center, Spine Conference, Los Angeles, CA, March 13, 2013
39. Anand, N.: Lumbar Minimally Invasive Surgery – An Overview. State of the Art Spine Care Cedars-Sinai Spine Center, Los Angeles, CA, Nov 16, 2013

**IN THE NEWS** (for additional news prior to 2013, please go to [www.infospine.net](http://www.infospine.net) )

Becker's Spine Review: "24 Spine Surgeons Discuss Most Exciting Trends for the Future" February 14, 2013

Bleacher Report: "Georgia LB Jarvis Jones Declares for Draft and Suffers from Spinal Stenosis" February 21, 2013

San Francisco Chronicle: "Golden State Warriors Andrew Bogut's Disc Protrusion" February 25, 2013

Becker's Spine Review: "9 Surgeons on Adopting Minimally Invasive Spine Techniques" April 11, 2013

Bleacher Report: "Georgia LB Jarvis Jones Declares for Draft and Suffers from Spinal Stenosis" April 22, 2013

Becker's Spine Review: "Bringing innovation to the operating room" May 3, 2013

Becker's Spine Review: "Biggest Challenges Spine Surgeons Face in 2013" June 6, 2013

WFAN (CBS) Sports Radio: "New York Giants' DE Jason Pierre-Paul Undergoes Spine Surgery" June 8, 2013

NFL Network "NFL AM": "New England Patriots' TE Rob Gronkowski Undergoes Spine Surgery" June 18, 2013

DailyRx.com: "Quitting Smoking Before Spine Surgery" June 18, 2013

Becker's Spine Review: "Where Spine Innovation Needs to be Headed" June 26, 2013

Becker's Spine Review: "One of the Country's Top Private Practices" June 26, 2013

Becker's Spine Review: "The Anand Spine Group to Participate in Clinical Trials for NuQu Disc Regeneration Therapy." July 2, 2013

Becker's Spine Review: "38 Spine Surgeons Researching Stem Cells" July 9, 2013

Becker's Spine Review: "Surgery in the ASC: 4 Myths Debunked" July 22, 2013

Becker's ASC Review: "Surgery in the ASC: 4 Myths Debunked" July 22, 2013

Becker's Spine Review: "5 Things to Know About Minimally Invasive Surgery & Spinal Deformity" August 16, 2013

About.com "Back & Neck Pain": "Laminectomy" September 5, 2013

Orthopedics This Week: "MIS Deformity Surgery Equal to Open Surgery" September 8, 2013

KFI-AM 640: "Bracing is Effective as Scoliosis Treatment" September 29, 2013

Becker's Spine Review: "Backing Bracing for Scoliosis Treatment" October 3, 2013

Green Bay Press-Gazette: "Green Bay Packers TE Jermichael Finley Suffers Bruised Spinal Cord" October 22, 2013

Becker's Spine Review: "Where Should the Spine Industry's Attention be Focused Right Now" October 24, 2013

DailyRx.com: "Worse Spondylitis May Be New Reason to Kick the Habit" October 26, 2013

Becker's Spine Review: "Are Spine Surgeries Moving to Outpatient Settings" November 7, 2013

Bleacher Report: "Revisiting Jermichael Finley's Terrifying Neck Injury and Spinal Cord Contusion" November 13, 2013

Becker's Spine Review: "Key Advice for a Successful Practice: 5 Spine Surgeons Weigh In" November 21, 2013

Becker's Spine Review: "92 Spinal Surgeon Device Inventors & Innovators to Know" November 22, 2013

Becker's Spine Review: "51 Spine Surgeons on Top Leadership Strategies" November 25, 2013

Becker's Spine Review: "15 Spine Surgeon Editors of Professional Journals" December 6, 2013

Becker's Spine Review: "28 Spine Surgeon Leaders at Academic Medical Centers" December 20, 2013

Bleacher Report: "What We Know About Tony Romo's Back Surgery" December 27, 2013

Bleacher Report: "What Steve Nash is Facing in His Return to The Lakers" December 27, 2013

Becker's Spine Review: "Dr. Neel Anand Named Spine Surgeon of the Day" January 20, 2014

Becker's Spine Review: "22 Spine Surgeons Focused on Trauma Care" January 22, 2014

Becker's Spine Review: "5 Spine Surgeons Discuss Spine Surgery Trends in 2014" January 23,

Becker's Spine Review: "Spine Revision Surgery: How Correct Indication Makes the Difference" January 29, 2014

Becker's Spine Review: "Biggest Avenues for 2014 Spine Industry Growth: MIS, Biologics & More" February 6, 2014

Bleacher Report: "Peyton Manning's Neck, 2014 Return: What Will Doctors Look for This Offseason?" February 7, 2014

Becker's Spine Review: "Is Outpatient Spine Surgery a Positive Trend?" February 20, 2014

Becker's Spine Review: "Spine Surgeon Leader to Know: Dr. Neel Anand" February 27, 2014

Becker's Spine Review: "Have Regulatory Burdens & Industry Changes Dampened Spine Surgeon Morale?" March 6, 2014

Becker's Spine Review: "30 Spine Surgeons Focused on Trauma" March 7, 2014

Becker's Spine Review: "Technology, Research, Minimally Invasive Technique: What Concerns Spine Surgeons Most?" March 13, 2014

Becker's Spine Review: "Spine Industry Leadership: How Does it Need to Evolve?" March 20, 2014

Bleacher Report: "Checking in on Jermichael Finley's Neck Injury, Medical and Free-Agency Status" March 26, 2014

Becker's Spine Review: "20 Cutting Edge Innovations in Spine." April 1, 2014 <http://www.beckersspine.com/20-cutting-edge-innovations-in-spine/20123-20-cutting-edge-innovations-in-spine>

Becker's Spine Review: "35 Spine Surgeons Performing Artificial Disc Replacement" April 15, 2014

Becker's Spine Review: "Simple, Effective Strategies to Maintain Patient Satisfaction" April 17, 2014

Becker's Spine Review: "How Spine Outcomes Registries are Transforming Treatment" April 21, 2014

Becker's Spine Review: "Advice to Young Surgeons: What 7 Spine Surgeons Have Never Forgotten." April 24, 2014 <http://www.beckersspine.com/spine/item/20501-advice-to-young-surgeons-what-7-spine-surgeons-have-never-forgotten>

Becker's Spine Review: "The Most Challenging Reimbursement Issues in Spine Today" May 8, 2014

KABC-TV Ch. 7: "Osteoporosis Myths" May 15, 2014

ABC7.com: "Osteoporosis Myths" May 15, 2014

KDOC-TV Ch. 56: "Osteoporosis Myths" May 15, 2014

Becker's Spine Review: "The Most Satisfying Aspects of a Career in Spine Surgery" May 29, 2014

Bleacher Report "Under the Knife": MLB Injury Analysis on Trout, Myers, Teixeira and More" June 4, 2014

Becker's Spine Review: "What Drives Hospital Employment," June 26, 2014

Green Bay Press-Gazette: "Not All Neck Injuries (NFL) are Equal," July 6, 2014

Becker's Spine Review: "Game Changer: The Future of Spinal Biologics," July 10, 2014

Becker's Spine Review: "What Difference Would Medicare Reimbursement for Spine Surgery in ASCs Make," July 17, 2014

Bleacher Report "Under the Knife": "Best-Case, Worst-Case Injury Scenarios for David Wilson Following Neck "Burner," July 30, 2014

Becker's Spine Review: "Avoiding Spine Patient Dissatisfaction," July 31, 2014

Becker's Spine Review: "Positive Trends in Spine Surgery," August 7, 2014

Becker's Spine Review: "What Spine Surgeons Want Residents to Know," August 14, 2014

EverydayHealth.com: "What is Ankylosing Spondylitis? 9 Facts About a Surprising Cause of Back Pain," August 15, 2014

Becker's Spine Review: "Important Professional Lessons," August 28, 2014



## **INDUSTRY RELATIONS**

Consulting: Globus Medical, Medtronic, Nuvasive, Baxano Surgical, Paradigm Spine,

Stocks. Stock Options, Private Investments: Bonovo, Globus Medical, Medtronic, Paradigm Spine, AF Cell, ,  
Theracell, Baxano Surgical

Royalties: Globus Medical, Medtronic, Nuvasive, Baxano Surgical

Surgical Advisory Board: Atlas Spine, Globus Medical, Theracell, Medtronic, Baxano Surgical

## **FELLOWS TRAINED**

John K. Stokes, MD 2001-2002  
Paul C. Liu, MD 2001-2002  
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