



San Diego Spine Foundation



Annual Report Academic Year August 2012 – July 2013

fostering excellence in spinal education and research

Research

Research Staff



Jeff Pawalek, B.S.
Research Director



Stacie Nguyen, MPH
Research Coordinator



Navid Arandi, B.S.
Research Fellow



Bo Robertson
Research Assistant

Publications and Presentations for the 2012-2013 Academic Year

PEER-REVIEWED PUBLICATIONS: ADULT

- Bess S, Line BG, Boachie-Adjei O, Hart R, Lafage V, Schwab F, Akbarnia BA, Ames CP, Burton DC, Hostin RA, Kleinberg E, Mundis Jr GM, Shaffrey CI, Smith JS **Does Recombinant Human Bone Morphogenetic Protein-2 (Bmp) Use In Adult Spinal Deformity (Asd) Increase Complications And Are Complications Dose Related? A Prospective, Multicenter Study Of 257 Consecutive Patients** NEUROSURGERY: 71(2) P E556-7
- Holly LT, Blaskiewicz DJ, Wu A, Feng C, Ying Z, Gomez-Pinilla F **Dietary Therapy To Promote Neuroprotection In Chronic Spinal Cord Injury** J Neurosurg Spine. 2012 Aug;17(2):134-40. doi: 10.3171/2012.5.SPINE1216
- Uribe JS, Smith DA, Dakwar E, Baaj AA, Mundis Jr GM, Turner AWL, Cornwall GB, Akbarnia BA **Lordosis Restoration After Anterior Longitudinal Ligament Release And Placement Of Lateral Hyperlordotic Interbody Cages During The Minimally Invasive Lateral Transpoas Approach: A Radiographic Study In Cadavers** J NEUROSURG SPINE. 17(5) p476-85
- Hart R, Cabalo A., Bess S, Akbarnia BA, Boachie-Adjei O, Burton D, Cunningham ME, Gupta M, Hostin R, Kebaish K, Klineberg E, Richard Hostin, Mundis Jr GM, Shaffrey C, Smith J, Wood K, ISSG **Comparison of Patient and Surgeon Perceptions of Adverse Events Following Adult Spinal Deformity Surgery** Spine (Phila Pa 1976). 2012 Nov 2. - [Epub ahead of print] PubMed PMID: 23124267
- Schwab FJ., Hawkinson N, Lafage V, Smith JS, Hart R, Mundis Jr GM, Burton DC, Line B, Akbarnia BA, Boachie-Adjei O, Hostin R, Shaffrey CI, Arlet V, Wood K, Gupta M, Bess S, Mummaneni PV, ISSG **Risk Factors For Major Peri-Operative Complications In Adult Spinal Deformity Surgery: A Multi-Center Review Of 953 Consecutive Patients** Eur Spine J. 2012 December; 21(12): 2603?2610
- Kai-Ming G Fu, Justin S Smith, Douglas C Burton, Khaled M Kebaish, Christopher I Shaffrey, Frank Schwab, Virginie Lafage, Vincent Arlet, Richard Hostin, Boachie-Adjei O, Behrooz Akbarnia, Shay Bess **Revision Extension To The Pelvis Versus Primary Spino-Pelvic Instrumentation In Adult Deformity: Comparison Of Clinical Outcomes And Complications Of Extension Of Previous Long Fusion To The Sacro-Pelvis: Is An Anterior Approach Necessary?** World Neurosurg. 2013 Jan;79(1):177-81
- Li Ym, Blaskiewicz DJ, Hall WA **Shunt-Related Intracranial Abscess Caused By Staphylococcus Lugdunensis In A Hydranencephalic Patient** World Neurosurg. 2013 Jan 12. Doi:Pii: S1878-8750(13)00107-1. 10.1016/J.Wneu.2013.01.046. [Epub Ahead Of Print]
- Akbarnia BA, Mundis Jr GM, Moazzaz P, Kabirian N, Bagheri R, Eastlack RK, Pawelek J **Anterior Column Realignment (Acr) For Focal Kyphotic Spinal Deformity Using A Lateral Transpoas Approach And All Release** J Spinal Disorders & Techniques, February 2013 (Ahead of Print)
- Schwab FJ, Blondel B, Bess S, Hostin R, Shaffrey CI, Smith JS, Boachie-Adjei O, Burton DC, Akbarnia BA, Mundis Jr GM, Ames CP, Kebaish K, Hart RA, Farcy JP, Lafage V, ISSG **Radiographic Spino-Pelvic Parameters And Disability In The Setting Of Adult Spinal Deformity: A Prospective Multicenter Analysis** Spine (Phila Pa 1976). 2013 Mar 25. [Epub Ahead Of Print] Pmid: 23532123 [PubMed - As Supplied By Publisher]
- Mummaneni PV, Tu TH, Ziewacz JE, Akinbo OC, Deviren V, Mundis GM **The Role Of Minimally Invasive Techniques In The Treatment Of Adult Spinal Deformity** Neurosurg Clin N Am. 2013 Apr;24(2):231-48.
- Hart R, Cabalo A, Bess S, Akbarnia BA, Boachie-Adjei O, Burton D, Cunningham ME, Gupta M, Hostin R, Kebaish K, Klineberg E, Richard Hostin, Mundis Jr GM, Shaffrey C, Smith J, Wood K, ISSG **Comparison Of Patient And Surgeon Perceptions Of Adverse Events Following Adult Spinal Deformity Surgery** Spine 38 (9) Pp 732-736 April 2013

growing rod
transcranial fusion
scoliosis
adult
disc disease
pelvis
sacro
interbody
pediatric
journal
publications

- 12 Terran J, Schwab F, Shaffrey CI, Smith JS, Devos P, Ames CP, Fu KM, Burton D, Hostin R, Klineberg E, Gupta M, Deviren V, **Mundis Jr GM**, Hart R, Bess S, Lafage V; ISSG *The SRS-Schwab Adult Spinal Deformity Classification: Assessment And Clinical Correlations Based On A Prospective Operative And Nonoperative Cohort* Neurosurgery. 2013 Jul 24. [Epub Ahead Of Print] Pubmed Pmid: 23756751
- 13 Ahmadian A, Verma S, **Mundis Jr GM**, Oskouian Jr RJ, Smith DA, Uribe JS. *Minimally Invasive Lateral Retroperitoneal Transposas Interbody Fusion For L4-5 Spondylolisthesis: Clinical Outcomes* J Neurosurg Spine. 2013 Jul 26
- 14 Ames CP, Smith JS, Scheer JK, Shaffrey CI, Lafage V, Deviren V, Moal B, Protosaltis T, Mummaneni PV, **Mundis Jr GM**, Hostin R, Klineberg E, Burton DC, Hart R, Bess S, Schwab FJ *A Standardized Nomenclature For Cervical Spine Soft-Tissue Release And Osteotomy For Deformity Correction* Neurosurgery. 2013 Jul 24
- 9 Vitale MG, Reidel MD, Glotzbecker MP, Matsumoto H, Roye DP, **Akbarnia BA**, Anderson RCE, Brockmeyer D, Emans J, Erickson MA, Flynn JM, Lenke LG, Lewis S, Luhmann SJ, McLeod L, Newton PO, Nyquist A, Richards BS, Shah SA, Skaggs DL, Smith JT., Sponseller PD, Sucato D, Zeller R, Saiman L *Building Consensus: Development Of A Best Practice Guideline (BPG) For Surgical Site Infection (SSI) In High-Risk Pediatric Spine Surgery* JOURNAL OF PEDIATRIC ORTHOPEDICS 33(5) 471-478

PEER-REVIEWED PUBLICATIONS: PEDIATRIC

- 1 **Akbarnia BA**, Campbell R, McCarthy RE *Optimizing Safety And Outcomes In Spinal Deformity Surgery: Early Onset Scoliosis* Spinal Deformity, Preview Issue, September 2012
- 2 Tis JE, Karlin LI, **Akbarnia BA**, Blakemore LC, Thompson GH, McCarthy RE, Tello C, Mendelow MJ, Southern EP *Early Onset Scoliosis: Modern Treatment And Results* Journal of Pediatric Orthopaedics 32(7) PP 647-657 November 2012
- 3 McElroy MJ, Sponseller PD, Dattilo, J.R., Thompson GH, **Akbarnia BA**, Shah SA, Snyder BD, GSSG *Growing Spine Study Group: Growing Rods For The Treatment Of Scoliosis In Children With Cerebral Palsy: A Critical Assessment* SPINE 37 (24) E1504-E1510 November 2012
- 4 **Kabirian N**, Hunt LA, Ganjavian MS, **Akbarnia BA** *Progressive Early-Onset Scoliosis In Conradi Disease: A 34 Year Follow-Up Of Surgical Management* J PEDIATR ORTHOP, 33 (2)
- 5 **Akbarnia BA**, Cheung KM, Noordeen HH, Elsebaie HB, Yazici M, Dannawi Z, **Kabirian N** *Next Generation Of Growth-Sparing Techniques; Preliminary Clinical Results Of A Magnetically Controlled Growing Rod In 14 Patients* SPINE 38 (8) PP 665-670 Apr-13
- 6 Corona J, Miller DJ, Downs J, **Akbarnia BA**, Betz RR, Blakemore LC, Campbell RM, Flynn JM, Johnston CE, McCarthy RE, Roye JR., D.P., Skaggs DL, Smith JT, Snyder BD, Sponseller PD, Sturm PF, Thompson GH, Yazici M, Vitale NG *Evaluating The Extent Of Clinical Uncertainty Among Treatment Options For Patients With Early-Onset Scoliosis* J BONE JOINT SURG AM: 95:e67(1-10)
- 7 McElroy MJ, Sponseller PD, Fuhrhop SK, Russel CJ, Newton PO, Marks MC, Sanders JO, Yazici M, **Pawelek J**, **Akbarnia BA** *Clinically Significant Differences Exist Between Curves In Operative Idiopathic Early-Onset Scoliosis And Adolescent Idiopathic Scoliosis* SPINE. 38(16):1368-1374, JULY 15, 2013
- 8 **Mundis Jr GM**, **Kabirian N**, **Akbarnia BA** *Dual Growing Rods For The Treatment Of Early Onset Scoliosis* J BONE JOINT SURG,(3)1 6E 2013

BOOK CHAPTERS

- 1 Vikas Mehta, Kevin T. Foley, Donald J. Blaskiewicz, Langston T. Holly **Posterior Laminectomy for Cervical Stenosis: Cervical Spine Surgery: Current Trends and Challenges** (Editors:Praveen V. Mummaneni, Adam S. Kanter, Michael Y. Wang, Regis W. Haid, Jr.)
- 2 **Nomoto EK**, **Kabirian N**, **Akbarnia BA**, **Mundis GM** **XLIF for Anterior Column Realignment Extreme Lateral Interbody Fusion (XLIF) Second Edition** (Editors:Goodrich J.A. and Volcan, I)

RESEARCH PRESENTATIONS: ADULT

Table of Meeting Icons and Acronyms

 SRS 2012	Scoliosis Research Society, 47th Annual Meeting & Course, Chicago, Illinois, Sept 5-8, 2012
 SMISS	Society for Minimally Invasive Spine Surgery (SMISS), Miami, Florida, Sept. 21-23, 2012
 NASS	North American Spine Society, 27th Annual Meeting, Dallas, TX, Oct 24-27, 2012
 SOLAS	Adult Spinal Deformity (ASD), 6th Annual SOLAS Research Meeting, San Diego, CA. May 9-11, 2013
 IMAST	20th International Meeting on Advanced Spine Techniques, Vancouver, BC, July 20-23, 2013
 BSRF	50th Anniversary International Phillip Zorab Symposium, London, England June 20-21, 2013
 GSF	6th International Congress Of Early Onset Scoliosis And Growing Spine (ICEOS) Dublin, Ireland November 15-16, 2112
 AAP	American Academy Of Pediatrics National Conference & Exhibition, New Orleans, Louisiana 2012 October 20-21, 2012
 AAOS	American Academy Of Orthopaedic Surgeons Annual Meeting, Chicago, Illinois, March 9-23, 2013



Jeff Pawelek presenting paper at ICEOS 2012

A. Podium Presentations (Adult):

- 1 Kai-Ming, F., Bess S, Shaffrey CI, Smith JS, Lafage V, Schwab F, Burton DC, **Akbarnia BA**, Ames CP, Boachie-Adjei O, Hart RA., Klineberg E, Gupta MC, Mummaneni PV, ISSG **Operatively (Op) Treated Adult Spinal Deformity (Asd) Patients Report Worse Health Related Quality Of Life (HRQOL) Than Nonoperative (Non), Regardless Of Age; However, Radiographic Deformity Differs Between Age Groups**

- 2 Bess S, Line B, Boachie-Adjei O, Hart RA., Ames CP Lafage V, Schwab F, **Akbarnia BA**, Burton DC, Hostin R, Klineberg E, **Mundis Jr GM**, Smith JS, Shaffrey CI, ISSG **Operative Time And Patient Age, Rather Than Recombinant Human Bone Morphogenetic Protein-2 (BMP) Use, Increase Major Complications In Adult Spinal Deformity (ASD) Surgery**

- 3 Smith JS, Klineberg E, Schwab F, Shaffrey CI, Moal B, Ames C, Hostin R, Kai-Ming, F., Burton DC, **Akbarnia BA**, Gupta MC, Hart RA., Bess S, Lafage V, ISSG **Change In Classification Grade By The Schwab-Srs Adult Spinal Deformity (ASD) Classification Predicts Impact On Health Related Quality Of Life (HRQOL) Measures: Prospective Analysis Of Operative And Nonoperative Treatment - Hibbs Award Nomination For Best Clinical Research Paper**

- 4 Fu KM, Bess S, Schwab F, Shaffrey C, Lafage V, Smith J, Ames C, Boachie-Adjei O, Burton D, Hart R, Klineberg E, Hostin R, **Mundis Jr GM**, Mummaneni P, ISSG **Health Impact Comparison Of Different Disease States And Population Norms To Adult Spinal Deformity (ASD): A Call For Medical Attention**

- 5 Hart R, Bess S, Burton D, Shaffrey C, Protopsaltis T, Boachie-Adjei O, Ames C, Deviren V, Hostin R, Klineberg E, Mummaneni P, **Mundis Jr GM**, Smith J, Schwab F, ISSG **Proximal Junctional Failure (Pjf) Classification And Severity Scale: Development And Validation Of A Standardized System**

- 6 **Akbarnia BA, Mundis Jr GM**, Moazzaz P, **Kabirian N, Bagheri R, Eastlack RK, Pawelek J** **Anterior Column Realignment (Acr) For Focal Kyphotic Spinal Deformity Using A Lateral Transpoas Interbody Approach And All Release**
 2012 (POSTER) 
- 7 Fu, K.M., Bess, R.S., Lafage V, Smith J, **Akbarnia BA**, Ames CP, Boachie-Adjei O, Burton DC, Hostin R, Hart R, Kebaish KM., Klineberg EO, Gupta MC, Deviren V, Wood KB, ISSG **Health Impact Comparison Of Different Disease States And Population Norms To Adult Spinal Deformity (ASD): A Call For Medical Attention** (Selected As Best Paper At NASS 2012)

- 8 Bess, R.S.,Line B, Boachie-Adjei O, Hart R, Lafage V, Schwab FJ., **Akbarnia BA**, Ames CP, Burton DC, Hostin R, Kebaish KM., Klineberg EO, Gupta MC, **Mundis Jr GM**, Deviren V, O'Brien M, Wood KB,Shaffrey CI, Smith JS, ISSG **Does Recombinant Human Bone Morphogenetic Protein-2 (BMP) Use In Adult Spinal Deformity (ASD) Increase Complications And Are Complications Dose Related? A Prospective Multicenter Study Of 257 Consecutive Patients**











- 9 Lafage V, Smith JS, Schwab FJ, Moal B, Klineberg EO, Ames CP, Hostin R, Fu, KM, Kebaish KM., Burton DC, **Akbarnia BA**, Gupta MC, Deviren V, **Mundis Jr GM**, Boachie-Adjei O, Hart R, Bess S, ISSG **Likelihood Of Reaching Minimal Clinically Important Difference In Health-Related Quality Of Life Measures: Prospective Analysis Of Operative And Nonoperative Treatment Of Adult Spinal Deformity**

- 10 Schwab FJ., Lafage V, Shaffrey CI, Smith JS, Moal B, Klineberg EO, Ames CP, Hostin R, Fu, KM, Kebaish KM., Burton DC, **Akbarnia BA**, Gupta MC, Boachie-Adjei O, Hart R, Bess S, ISSG **The Schwab-SRS Adult Spinal Deformity Classification: Assessment And Clinical Correlations Based On A Prospective Operative And Nonoperative Cohort**
 
- 11 Smith JS, Klineberg EO, Schwab FJ., Shaffrey CI, Moal B, Ames CP, Hostin R, Fu, KM, Kebaish KM., Burton DC, **Akbarnia BA**, Gupta MC, Deviren V, **Mundis Jr GM**, Boachie-Adjei O, Hart R, Bess S, Lafage V, ISSG **Change In Classification Grade By The Schwab- Srs Adult Spinal Deformity Classification And Impact On Health-Related Quality Of Life Measures: Prospective Analysis Of Operative And Nonoperative Treatment**





transcranial fusion scoliosis
 posters disc disease sacro interbody presentations
 podium adult lumbar cervical pelvic pediatric growing rod

- 12 Nomoto E, Stanton P, Eastlack RK, Kabirian N, Bruffey JD, Pawelek J., Mundis Jr GM, Akbarnia BA
Intervertebral Subsidence After LLIF Can Lead To Loss Of Correction After Two Years
SOLAS
- 13 Mundis Jr GM, Amaral R, Pawelek J, Kabirian N, Kyaw J, Bagheri R, Akbarnia BA *The Role Of The Lateral Interbody Fusion In The Treatment Of Adult Spinal Deformity*
SOLAS
- 14 Eastlack RK, Mundis Jr GM, Wang M, Mummaneni PV, Uribe JS, Okonkwo DO, Akbarnia BA, Anand N, Kanter AS, Park P, Lafage V, Shaffrey CI, Fessler RG, Deviren V, ISSG *Is There A Patient Profile That Characterizes A Patient As A Candidate For Minimally Invasive Surgery (Mis) To Treat Adult Spinal Defomrity (ASD)?*
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- 15 Uribe J, Mundis Jr GM, Okonkwo D, Kanter A, Eastlack RK, Wang M, Mummaneni P, Anand N, Fessler R, La Marca F, Park P, Lafage V, Shaffrey C, Deviren V, ISSG *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*
SOLAS IMAST
- 16 Mummaneni PV, Wang MW, Lafage V, Ziewacz J, Okonkwo D, Uribe JS, Eastlack RK, Anand N, Fessler R, Kanter A, Deviren V, La Marca F, Shaffrey C, Mundis Jr GM, ISSG *Comparison Of 3 Minimally Invasive Surgery (MIS) Strategies To Treat Adult Spinal Deformity (ASD)*
SOLAS
- 17 Mummaneni P, Wang M, Lafage V, Ziewacz J, Terran J, Okonkwo D, Uribe J, Anand N, Fessler R, Kanter A, La Marca F, Shaffrey C, Deviren V, Mundis Jr GM, ISSG *Does Minimally Invasive Posterior Instrumentation (PPI) Prevent Proximal Junction Kyphosis (PJK) In Adult Spinal Deformity (ASD) Surgery? A Prospectively Acquired Propensity Matched Cohort Analysis*
SOLAS IMAST
- 18 Mundis Jr GM, Lafage V, Akbarnia BA, Eastlack RK, Wang, M.Y., Uribe JS, Anand N, Mummaneni PV, Okonkwo DO, Kanter AS, Lamarca, F., Fessler RG, Shaffrey CI, Deviren V, ISSG *A Prospective Porpensity Matched Cohort Analysis Of Minimally Invasive (MIS) Hybrid (HYB) And Open Spine Surgery (Open) For The Treatment Of Adult Spinal Deformity (ASD)*
SOLAS IMAST
- 19 Mundis Jr GM, Akbarnia BA, Kabirian N, Pawelek J., Eastlack RK, Shaffrey CI, Klineberg, E, Bess S, Ames C, Deviren V, Lafage V, ISSG *Anterior Column Realignment (ACR) Has Similar Results To Pedicle Subtraction Osteotomy (PSO) In Treating Adults With Sagittal Spinal Deformity: A Multicenter Study*
SOLAS IMAST
- 20 Eastlack RK, Scheer J, Kim HJ, Boachie-Adjei O, Deviren V, Smith J, Hart R, Bess S, Mundis Jr GM, Lafage V, Schwab F, Shaffrey C, Burton D, Ames C, ISSG *Do Operative Outcomes for Adults with Spinal Deformity Differ Based on the Relative Severity of Back and Leg Pain Prior to Surgery?*
IMAST
- 21 Kim HJ, Boachie-Adjei O, Scheer J, Hostin R, Kebaish K, Smith J, Mundis Jr GM, Eastlack RK, Schwab B, Lafarge V, Hart R, Bess S, Deviren V, Shaffrey CI, Ames C, ISSG *Upper Thoracic versus Lower Thoracic Upper Instrumented Verbebrae Endpoints have Similar Outcomes and Complications in Adult Scoliosis at 2-Year Follow up*
IMAST
- 22 Saravanja, D., Ferguson, J.A., Kebaish K, Geck, M.J., Maziad, A.M., Akbarnia BA, Boachie-Adjei O, CSSG *A Comparison Of Rod Breakage Rates In Adult Idiopathic Scoliosis Patients Treated With Posterior Only Surgery With BMP Versus Anterior/Posterior Surgery Without BMP:*
IMAST
- 23 Hamilton, D.K., Hiratzka, J.R., Bess, R.S., Schwab FJ., Shaffrey CI, Ames CP, Mundis Jr GM, JR., Lafage V, Deviren V, Smith MD, J.S., Klineberg E, Akbarnia BA, Burton DC, Hart RA. ISSG *HRQOL Scores And Radiographic Parameters Do Not Drive Patient Satisfaction After Adult Spinal Deformity Surgery*
IMAST
- 24 Bess, R.S., Line B, Hart RA., Klineberg E, Ames CP, Akbarnia BA, Boachie-Adjei O, Burton DC, Hostin R, Kebaish K, Lafage V, Schwab FJ., Shaffrey CI, Smith JS, ISSG *Return To Surgery Does Not Worsen Health Related Quality Of Life (Hrqol) Or Patient Satisfaction At Two Year: An Analysis Of Incidence And Risk Factors For Secondary Surgery In Adult Spinal Deformity (ASD)*
IMAST
- 25 Ferguson, J.A., Saravanja, D., Kebaish K, Geck, K., Maziad, A.M., Akbarnia BA; Boachie-Adjei O, CSSG *Comparison Of Operative Complications In Posterior Only Surgery Utilizing BMP Versus Combined Anterior/ Posterior Surgery With No BMP For Adult Idiopathic Scoliosis Surgery*
IMAST
- 26 Haque, R., Mundis Jr GM, Ahmed, Y.M., EL Ahmadiéh, T.Y., Wang, M.Y., Praveen V. Mummaneni PV, Uribe JS, Okonkwo DO, Anand N, Akbarnia BA, Kanter AS, La Marca, F., Lafage, V., Terran, J.S., Deviren V, Fessler RG, ISSG *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*
SOLAS IMAST
- 27 Singh M, Smith J, Klineberg E, Shaffrey C, Lafage V, Schwab F, Protopsaltis T, Mundis Jr GM, Hostin R, Deviren V, Hart R, Burton D, Bess S, Ames C, ISSG *Surgical Treatment Of Pathological Loss Of Lumbar Lordosis (Flatback) In The Setting Of Normal Sagittal Vertical Axis (SVA) Achieves Similar Clinical Improvement As Surgical Treatment For Elevated SVA*
IMAST

transcranial fusion scoliosis
posters
disc disease
podium adult
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pelvis pediatric
sacro interbody presentations

- 28 Bess S, FU K, Lafage V, Schwab F, Shaffrey C, Ames C, Hart R, Klineberg E, **Mundis Jr GM**, Hostin R, Burton D, Gupta M, Boachie-Adjei O, Smith J, ISSG *Disease State Correlates For Type And Severity Of Adult Spinal Deformity (ASD): Assessment Guidelines For Health Care Providers*
 **IMAST**
- 29 KIM H, **Mundis Jr GM**, Eastlack RK, Burton D, Scheer J, Boachie-Adjei O, Cunninham M, Smith J, Bess S, Shaffrey C, Ames C, ISSG *Severity And Treatment Response Of Back And Leg Pain Differ By Curve Location In Adult Spinal Deformity (ASD)*
 **IMAST**
- 30 Scheer J, Protopsaltis T, Kim H, Hostin R, Kebaish K, Smith J, **Mundis Jr GM**, Schwab F, Lafage V, Hart R, Bess S, Shaffrey C, Deviren V, Ames C, ISSG *Health Comparison Of Cervical Sagittal Deformity And Thoracolumbar Sagittal Deformity On Baseline Disability And Surgical Outcomes: Cervical PSO Versus Lumbar PSO*
 **IMAST**
- 31 Protopsaltis T, Broansard N, Terran J, Smith J, Klineberg E, **Mundis Jr GM**, Kim H, Hostin R, Hart R, Ames C, Shaffrey C, Bess S, Schwab F, Lafage V, ISSG *Cervical Sagittal Deformity Develops After PJK In Adult Thoracolumbar Deformity Correction: Radiographic Analysis Utilizing A Novel Global Sagittal Parameter, The CTPA*
 **IMAST**
- 32 Poorman C, Slobodyanyuk K, Smith J, Protopsaltis T, Hostin R, Bess S, **Mundis Jr GM**, Schwab F, Lafage V, ISSG *Clinical Improvement Through Nonoperative Treatment Of Adult Spinal Deformity: Who Is Likely To Benefit?*
 **IMAST**
- 33 Klineberg E, FU K, Smith J, Lafage V, Schwab F, Bess S, Hart R, Kebaish K, Burton D, Shaffrey C, Ames C, Hostin R, **Mundis Jr GM**, Gupta M, ISSG *Impact Of Major And Minor Complications On Health Related Quality Of Life Following Adult Spinal Deformity Surgery: Multi-Center Prospective Database*
 **IMAST**
- 34 Gupta M, Boachie-Adjei O, Cunninham M, Protopsaltis T, Deviren V, **Mundis Jr GM**, Ames C, Hostin R, Lafage V, Klineberg E, Smith J, Terran J, ISSG *Coronal Imbalance May Be Neglected In Patients Undergoing Majority Sagittal Deformity Correction*
 **IMAST**
- 35 Hiratzka J, Hamilton K, Bess S, Schwab F, Shaffrey C, Ames C, **Mundis Jr GM**, Lafage V, Deviren V, Smith J, Klineberg E, Boachie-Adjei O, Burton D, Hart R, ISSG *Stiffness After Fusion For Adult Spinal Deformity Does Not Significantly Impact Patients? Functional Status Or Satisfaction*
 **IMAST**
- 36 Ryan D, Protopsaltis T, Ames C, Hostin R, Klineberg E, **Mundis Jr GM**, Obeid I, Kebaish K, Smith J, Boachie-Adjei O, Burton D, Hart R, Schwab F, Lafage V, ISSG *Does T1 Pelvic Angle (TPA) Effectively Assess Sagittal Imbalance And Can It Predict Sustainable Correction?*
 **IMAST**
- 37 Wang M, Mummaneni P, FU K, Anand N, Okonkwo D, Kanter A, La Marca F, Fessler R, Uribe J, Shaffrey C, Lafage V, Haque R, Deviren V, **Mundis Jr GM**, ISSG *Less Invasive Surgery For Treating Adult Spinal Deformities (ASD): Ceiling Effects For Cobb Angle Correction With Three Different Techniques*
 **IMAST**

B. Poster Presentations (Adult):

- 1 Nomoto EK, Stanton P, Kabirian N, Bruffey JD, Pawelek J, **Mundis Jr GM**, Akbarnia BA, Eastlack RK *Subsidence and Lumbar Sagittal Alignment Following Lateral Lumbar Interbody Fusion*
 **SMISS**
- 2 Stanton P, Nomoto EK, Kabirian N, Bruffey JD, **Mundis Jr GM**, Akbarnia BA, Eastlack RK *Analysis of Transposas Lateral Lumbar Interbody Fusion (LLIF) for the Treatment of Adult Lumbar Degenerative Spondylolisthesis (DS): A Radiographic Review*
 **SMISS**
- 3 K.M., Bess S, Shaffrey CI, Smith JS, Lafage V, Schwab FJ., Burton DC, Boachie-Adjei O, Hart R, **Akbarnia BA**, Ames CP, Hostin R, Kebaish KM., Klineberg EO, Gupta MC, **Mundis Jr GM**, Deviren V, O'Brien M., Wood KB, ISSG *Operatively (OP) Treated Adult Spinal Deformity (ASD) Patients Report Worse Health-Related Quality Of Life (HRQOL) Than Nonoperative (NON), Regardless Of Age, However Radiographic Deformity Differs Between Age Groups*
 **INASS**



Dr. Akbarnia at Japanese Scoliosis Society, 2012

- 4 Eastlack RK, Mundis Jr GM, Wang M, Mummaneni P, Uribe J, Okonkwo D, Akbarnia BA, Anand N, Kanter A, Park P, Lafage V, Shaffrey C, Fessler R, Deviren V, ISSG *Is There A Patient Profile That Characterizes A Patient As A Candidate For Minimally Invasive Surgery (MIS) To Treat Adult Spinal Deformity?*

IMAST

- 5 Kim HJ, Mundis Jr GM, Eastlack RK, Burton D, Scheer J, Boachie-Adjei O, Cunningham ME, Smith J, Bess S, Ames C, ISSG *Severity And Treatment Response Of Back And Leg Pain Differ By Curve Location In Adult Spinal Deformity (ASD)*

IMAST

- 6 Terran J, Schwab F, Mundis Jr GM, Klineberg E, Buchowsky J, Hart R, Hostin R, Gupta M, Ames C, Smith J, Shaffrey C, Lafage V, Bess S, Burton D, ISSG *Poor Psychosocial Profile Reported By Sf 36, SRS 22R, And DRAM Does Not Predict Outcome Following Adult Spinal Deformity Surgery*

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- 7 McCarthy I, O'Brien M, Ames C, Errico T, Kim H, Mundis Jr GM, Schwab F, Klineberg E, Shaffrey C, Gupta M, Polly D, Hostin R, ISSG *Quantifying The Role Of Baseline HRQOLI And Readmissions On The Cost-Effectiveness Of Surgical Treatment For Adult Spinal Deformity (ASD)*

IMAST



Research Advancing Treatment

RESEARCH PRESENTATIONS: PEDIATRIC

A. Podium Presentations (Pediatric)

- 1 Akbarnia BA, Cheung KM, Noordeen HH, Elsebaie HB, Yazici M, Dannawi Z, Kabirian N *Next Generation Of Growth-Sparing Techniques; Preliminary Clinical Results Of A Magnetically Controlled Growing Rod In 14 Patients.*

SRS 2012

- 2 Shah SA, Karatas AF, Dhawale AA, Dede O, Holmes L, Yorgova P, Neiss GI, Mundis Jr GM, Pawelek J., Akbarnia BA *Growing Spine Study Group: What Is The Effect Of Serial Growing Rod Lengthening On The Sagittal Profile And Pelvic Parameters In Early Onset Scoliosis?*

SRS 2012

- 3 Matsumoto H, McCalla DJ, Nair, K., Williams BA, Corona J, Akbarnia BA, Smith JT., Emans JB, Skaggs DL, Vitale MG *The Early Onset Scoliosis Questionnaire (EOSQ) Reflects Improvements In Quality Of Life After Growth Rod Surgery.*

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- 4 Kabirian N, Akbarnia BA, Pawelek J., Alam, M., Mundis Jr GM, Acacio R, Thompson GH, Marks, D.S., Gardner A., Sponseller PD, Skaggs DL, GSSG *Deep Surgical Site Infection Following Growing Rod Surgery In Early Onset Scoliosis: How Does It Change The Course Of Treatment? Hibbs Award Nomination For Best Clinical Research Paper*

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- 5 Lebl, D.R., Boachie-Adjei O, Akbarnia BA, Gogia, J., Krajchich, J.I., Woo, R., King, A.B., Cunningham ME, Rahm, M.D., CSSG *The Treatment Of Thoracolumbar/Lumbar Adolescent Idiopathic Curves (Lenke 5c): Anterior Vs. Posterior Approach With Modern Instrumentation*

SRS 2012

- 6 Schwend, R.M., Blakemore LC, Akbarnia BA, Reigut, J.L., Schmidt, J.A., CSSG *Coupled Symmetry And Proportional Expansion Of The Ribs Through Adolescence*

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- 7 Akbarnia BA, Yazsay, B., Yazici M, Kabirian N, Strauss, K., Glaser, D.A., CSSG *Biomechanical Evaluation Of Four Different Foundation Constructs Commonly Used In Growing Spine Surgery: Are Rib Anchors Comparable To Spine Anchors? 6th Triennial Congress Of The International Federation Of Pediatric Orthopaedic Societies, Toronto, Canada, May 1, 2013*

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- 9 McCalla DJ, Williams BA, Matsumoto H, Akbarnia BA, Blakemore LC, Betz RR, Flynn JM, Johnston CE, McCarthy, R., Roye DP, Skaggs DL, Smith JT., Snyder BD, Sponseller PD, Sturm PF, Thompson GH, Yazici M, Vitale MG *Introducing The Early Onset Scoliosis Classification System*

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- 10 Kabirian N, Mundis Jr GM, Kostial P, Yazsay B, Kyaw J, Pawelek J., Akbarnia BA *Recommendations For Patients And Families After Growing Rod Surgery: Surgeon Agreement On Post-Operative Care*

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- 11 Yamaguchi, K., Skaggs, D., Mansour, S., Levitan, J., Myung, K.S., Yazici M, Johnston, C., Thompson, G., Sponseller, P., Akbarnia BA, Vitale, M. *Are Proximal Rib Anchors Protective Against Rod Breakage In Distraction-Based Growing Rods?*

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- 12 Yazsay, B., Kabirian N, Pawelek J., Bastrom, T, Emans J, Thompson GH, Mundis Jr GM, Akbarnia BA, GSSG *What Do Coronal Flexibility Films Really Tell Us About The Treatment Of Idiopathic Early Onset Scoliosis Patients Using Growing Rods*

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- 13 Akbarnia BA, Kabirian N, Pawelek J., Thompson GH, Emans JB, Sponseller PD, Skaggs DL *Five To Sixteen-Year Results Of 201 Growing Rod Patients: Is There A Difference Between Etiologies?*

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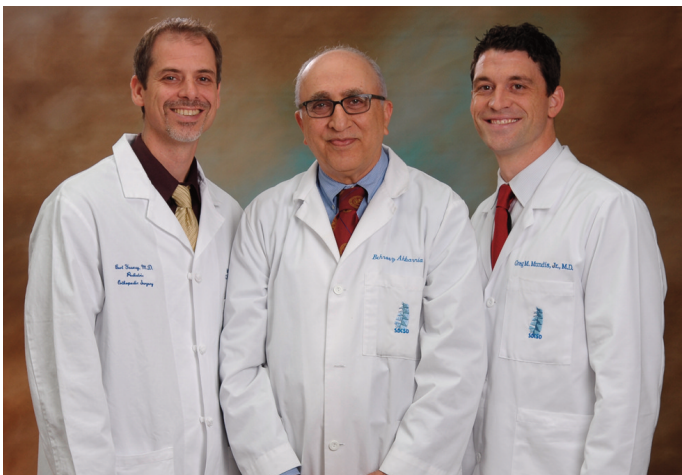
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- 14 Vitale MG, Park, H.Y., Matsumoto H, McCalla DJ, Roye DP, Skaggs DL, Akbarnia BA *Correction And Complications In The Treatment Of EOS: Is There A Difference Between Spine Vs. Rib-Based Proximal Anchors*
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- 15 Akbarnia BA, Kabirian N, Pawelek J., Thompson GH, Emans JB, Sponseller PD, Skaggs DL, GSSG *Long-Term Results Of Growing Rod Treatment In 201 Patients: Is There A Difference Between Aetiologies?*
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- 16 Heung KM, Cheung JP, Samartzis, D., Cheung Mak K, Wong YW, Cheung WY, Akbarnia BA, Luk KDK *The Safety And Efficacy Of A Remotely Distractible, Magnetically Controlled Growing Rod (MCGR) For The Treatment Of Scoliosis In Children*
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- 17 Akbarnia BA, Cheung K, Demirkiran G, Elsebaie H, Emans J, Johnston C, Mundis Jr GM., Noordeen H, Pawelek J, Shaw M, Skaggs D, Sponseller P, Thompson GH, Yazici M, GSSG *Traditional Growing Rods Versus Magnetically Controlled Growing Rods: A Case-Matched Two Year Study*
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- 18 Schwend RM, Kishan S., Blakemore LC, Ferguson J, Reigru JL, Schmidt JA, Akbarnia BA *Relation Between Paediatric Rib And Thoracic Vertebral Morphology With Age*
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- 19 Kishan S, Blakemore LC, Schwend RM, Ferguson J, Reigru JL, Schmidt JA, Akbarnia BA *Rib And Vertebral Growth And Relationship To Chest Volume*
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- 20 Repko M, Aydinli U, Rehak L, Grevitt M, Zabka M, Akesen B, Nnadi C, Klemme W, Caarl A, Akbarnia BA *Apical Short-Segment Correction In Adolescent Idiopathic Scoliosis: A Multicenter Study Of A New Innovative Posterior Technique*
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- 21 Yaszay B, Kabirian N, Mundis Jr GM, Pawelek J, Bartley CE, Akbarnia BA *EOS Imaging System Is Available For Early Onset Scoliosis Patients And Can Reduce Their Ionizing Radiation Exposure*
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Poster Presentations (Pediatric):

- 1 El Sebaie HB, Noordeen HH, Akbarnia BA *Incidence Magnitude And Classification Of Pedicle Screw Migration*
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- 2 Akbarnia BA, Kabirian N, Pawelek J., Zhang D, Redding G, Emans JB, Shah SA, Johnston II CE *Is There A Significant Increase In Thoracic Height After Growing Rod Surgery For Early Onset Scoliosis?*
 AAOS
- 3 Shah SA, Karatas A, Dhawale, R, Dede O, Holmes L, Yorgova P, Neiss G, Mundis G, Pawelek J, Akbarnia BA *What Is The Effect Of Growing Rod Lengthening On The Sagittal Profile And Pelvic Parameters In Early Onset Scoliosis?*
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- 4 Akbarnia BA, Yaszay B, Yazici M, Kabirian N, Strauss K, Glaser DA *Rib Anchors As An Alternative To Spine Anchors In An Immature Porcine Model: Can They Withstand Similar Loads?*
 AAOS
- 5 McElroy MJ, Sponseller PD, Fuhrhop SK, Newton PO, Marks M, Sanders JO, Akbarnia BA *Operative Idiopathic Early Onset Scoliosis (IEOS) And AIS Curves Have Different Characteristics*
 AAOS
- 6 Schwend RM, Kishan S, Blakemore LC, Ferguson J, Reigru JL, Schmidt JA, Akbarnia BA, CSSG *New Data On The Growth Patterns Of The Pediatric Spinal Canal*
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- 7 Ferguson J, Kishan S, Blakemore LC, Schwend RM, Reigru JL, Schmidt JA, Akbarnia BA, CSSG *Posterior Rib Geometry - What Is The Ideal Site For Proximal Rib Anchors In Growing Rod Surgery?*
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