



# San Diego Spine Foundation

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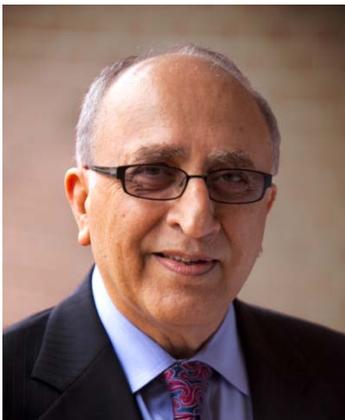
## Annual Report

Academic Year

August 2011 – July 2012



fostering excellence in spinal education and research



### **Letter from the President and Founder**

*I am pleased to present you with our annual report reflecting the activities of the San Diego Spine Foundation for the academic year August 2011–July 2012. Since its inception in 2004, our Foundation has grown tremendously towards our mission of fostering excellence in education and research related to the care of patients with spinal disorders, with the goal of benefitting our patients, the medical community and members of the public.*

*A strong educational component of the Foundation is the Fellowship program. The San Diego Spine Fellowship Program continues to grow, remaining highly competitive with additional faculty as well as increasing numbers of clinical fellows, international visiting fellows from several different countries, and research fellows, all of whom are being trained by our faculty and are involved in patient care and research in our affiliated institutions.*

*Community spine surgeons regularly participate in our educational activities, which include weekly conferences, journal clubs, and our annual citywide symposium. This conference has continued yearly since its launch in 1997, with visiting professors who are leaders in the field of spine surgery participating as keynote speakers. Next year, a major conference is being planned for June 1, 2013. This meeting will be combined with the 2013 International Spine Study Group (ISSG) Meeting, increasing the depth and scope of the event even more than before. We have also hosted tutorials for surgeons from around the world aimed at teaching principles and techniques of new treatment options for spine surgery both in adults and pediatric age groups. It has been my pleasure to work with the entire faculty since its inception and to welcome the new Co-Directors of the fellowship, Bob Eastlack and Greg Mundis, who will carry this program into the future.*

*The Foundation has developed a strong research program, both in clinical as well as laboratory research. As you will note in our research report, the results of these studies are presented in many meetings throughout the world. Some of these research projects have been conducted as multicenter studies, in collaboration with centers located abroad. I would like to thank our Research Director Jeff Pawelek, B.S., and his team for leading this effort. The research report will provide a summary of the department's accomplishments over the past academic year.*

*Our faculty has begun to donate their time and talent by giving back to underserved regions of the world in Africa, Middle East and other countries where service is needed. Our plan is to expand this program as we receive new funding sources.*

*Our mission statement calls for us to strive for excellence in medical education, research, and outreach, in order to achieve the best possible medical care for our patients so that we may better serve our community and the public. I hope you find our annual report informative and that the activities of the past year indicate our continued efforts to dedicate ourselves to the SDSF mission.*

*Finally, I would like to acknowledge and thank our Board members, Sarah Aghassi, Esq.; Robert Eastlack, M.D.; Pat Kostial, R.N., B.S.N.; and Greg Mundis, M.D. for their voluntary contributions and their commitment to move the goals of the Foundation forward with their advice and hard work over the past years.*

*Our Foundation's role is to support all aspects of our research, education, and outreach; however, we cannot do this work successfully without funding. We appreciate our donors for their previous support and we want you to know that no donation is too small. Would you consider helping us continue our mission? We would be honored to accept your contribution and would be grateful for your support of SDSF. For more information, please visit our website at [www.sandiegospinefoundation.org](http://www.sandiegospinefoundation.org).*

*Thank You for your consideration...*

*Behrooz A. Akbarnia, M.D.  
President and Founder  
San Diego Spine Foundation*

## San Diego Spine Foundation Board of Directors

Behrooz A. Akbarnia, M.D.  
 Sarah E. Aghassi, Esq.  
 Robert K. Eastlack, M.D.,  
 Patricia N. Kostial, R.N., B.S.N.  
 Gregory M. Mundis, Jr., M.D.

## San Diego Combined Spine Fellowship Program Co-Directors' Report

*The San Diego Spine Fellowship Program continues to enjoy outstanding applicants, and our Fellows benefit from a broad exposure in spine surgery. Our faculty of seven spine surgeons covers both orthopaedic and neurosurgery spine backgrounds, and combine to provide tremendous experience in adult, pediatric, trauma, tumor, deformity, degenerative, and minimally invasive spine care. We take great pride in providing as broad and thorough an exposure in our field as possible, and the training program incorporates the invaluable input from each of the Fellows as they progress.*

*Our clinical and research fellows also generate a great deal of basic science and clinical research for presentation and publication throughout the world. In 2011-2012, clinical fellows Dr. Edward Nomoto and Dr. Paul Stanton, completed a total of three research projects, which were presented at national and international meetings during their fellowship year and are currently in the process of being published.*

*In addition to this productive academic year they assisted in over 760 surgeries, generating enormous experience for them as they launch their clinical practices, qualified to enter the spine surgery community.*



**Robert K. Eastlack, M.D.**  
 Co-Director, San Diego Spine Fellowship  
 Scripps Clinic,  
 La Jolla, CA.



**Gregory M. Mundis, Jr., M.D.**  
 Co-Director, San Diego Spine Fellowship  
 San Diego Center for Spinal Disorders  
 San Diego, CA.

### FELLOWSHIP FACULTY



**Ramin Bagheri, M.D.**  
 Faculty, San Diego Spine Fellowship  
 San Diego Center for Spinal Disorders,  
 San Diego, CA.



**James D. Bruffey, M.D.**  
 Faculty, San Diego Spine Fellowship  
 Scripps Clinic,  
 La Jolla, CA.



**Maneesh Bawa, M.D.**  
 Adjunct Faculty, San Diego Spine Fellowship  
 San Diego Orthopaedic Associates Medical Group,  
 San Diego, CA.



**Donald Blaskiewicz, M.D.**  
 Adjunct Faculty, San Diego Spine Fellowship  
 Neurosurgical Medical Clinic,  
 San Diego, CA.



**Behrooz A. Akbarnia, M.D.**  
 Director Emeritus, San Diego Spine Fellowship  
 Medical Director,  
 San Diego Center for Spinal Disorders,  
 San Diego, CA.

### 2011-12 CLINICAL FELLOWS

**Edward K. Nomoto, M.D.**  
 UCSF School of Medicine

**Paul Stanton, D.O.**  
 Ohio University of Osteopathic Medicine

### 2011-12 VISITING FELLOWS

**Mohsen Karami, M.D.** (Iran)  
**Jonatas Fernandez, M.D.** (Brazil)  
**Rodrigo Amaral, M.D.** (Brazil)

*“strive for excellence in medical education, research, and outreach”*

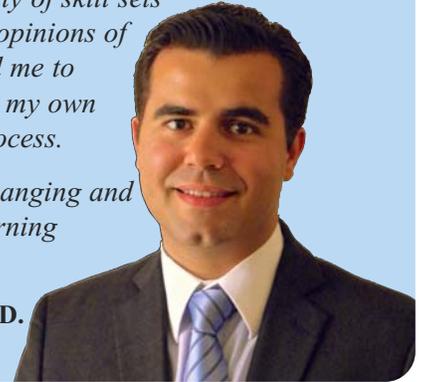


San Diego Fellowship Faculty with 2011 Graduates Payam Moazazz, M.D. and Michael Hennessey, M.D.

*During my fellowship, I had the honor of working with the researchers, which has allowed me to contribute to various scientific papers. The friends and professional connections I have made during my time in San Diego, I hope to take back with me to Brazil, further strengthening the bonds between our groups. The diversity of skill sets and expert clinical opinions of the team has helped me to refine and fine-tune my own decision-making process.*

*It has been a life changing and an enlightening learning experience.*

**Rodrigo Amaral, M.D.**  
Brazil



*The fellowship year exposed us to various pathologies and techniques in spine. It was a great learning experience and has prepared us well for practice.*

**Edward Nomoto, M.D.**  
UCSF School of Medicine



**FELLOWSHIP STAFF**

**Patricia N. Kostial, R.N., B.S.N.**  
Nurse Manager

**Lisa M. Kotera**  
Fellowship Coordinator

**Irem Cuellar, M.S., M.S., HRM**  
SDCSD Manager



The San Diego Spine Fellowship program offers a unique and comprehensive surgical training experience very few U.S. spine fellowship programs offer. Upon completion of the program our Fellows are well prepared to manage a multitude of spinal disorders using the latest treatment techniques.

## Research

*Below is the list of publications and presentations for 2011-2012 academic year*

### PEER-REVIEWED PUBLICATIONS: ADULT SPINE

- 1 Dakwar E, Le T, Baaj A, Le A, Smith W, **Akbarnia B**, Uribe J. Abdominal Wall Paresis as a Complication of Minimally Invasive Lateral Transposas Interbody Fusion. Neurosurg Focus. 2011 Oct;31(4):E18.
- 2 Klineberg E, Schwab F, Ames C, Hostin R, Bess S, Smith J, Gupta M, Boachie O, Hart R, **Akbarnia B**, Burton D, Lafage V. Acute Reciprocal Changes Distant from the Site of Spinal Osteotomies Affect Global Post Operative Alignment. Adv Orthop. 2011; 2011:415946. Epub 2011 Oct 4.
- 3 Haghghi S, **Mundis G**, Zhang R, Ramirez B. Correlation Between Transcranial Motor and Somatosensory-Evoked Potential Findings in Cervical Myelopathy or Radiculopathy During Cervical Spine Surgery. Neurol Res. 2011 Nov;33(9):893-8.
- 4 Lafage V, Ames C, Schwab F, Klineberg E, **Akbarnia B**, Smith J, Boachie-Adjei O, Burton D, Hart R, Hostin R, Shaffrey C, Wood K, Bess S. International Spine Study Group. Changes in Thoracic Kyphosis Negatively Impact Sagittal Alignment Following Lumbar Pedicle Subtraction Osteotomy. A Comprehensive Radiographic Analysis. Spine. 2012 Feb 1;37(3):E180-7.
- 5 Fu K, Smith J, Burton D, Shaffrey C, Boachi-Adjei O, Carlson B, Schwab F, Lafage V, Hostin R, Bess S, **Akbarnia B**, **Mundis G**, Klineberg E, Gupta M. International Spine Study Group. Outcomes and Complications of Extension of Previous Long Fusion to the Sacro-Pelvis: Is an Anterior Approach Necessary? World Neurosurg. 2012 Jun 18.
- 6 Schwab, F.J., Patel, A., Shaffrey, C.I., Smith, J.S., Farcy, J.P., Boachie-Adjaei, O., Hostin, R., Hart, R., **Akbarnia, B.A.**, Burton, D.C., Bess, S., Lafage, V. : Sagittal Realignment Failures Following Pedicle Subtraction Osteotomy Surgery: Are We Doing Enough? Journal Of Neurosurgery: Spine. Vol 16, June 2012.
- 7 Lafage, V., Bharucha, N.J., Schwab, F., Hart, R.A., Burton, D., Boachie-Adjei, O., Smith, J.S., Hostin, R., Shaffrey, C., Gupta, M., **Akbarnia, B.A.**, Bess, S.: Multicenter Validation of a Formula Predicting Postoperative Spinopelvic Alignment. j neurosurg spine, Volume 16, Issue 1, January 2012, PP. 15-21 .

### PEER-REVIEWED PUBLICATIONS: PEDIATRIC SPINE

- 1 **Akbarnia B.A.**; Campbell RM; Dimeglio A; Flynn JM; Redding GJ; Sponseller PD; Vitale MG; Yazici M: Fusionless Procedures for the Management of Early-Onset Spine Deformities in 2011: What do we Know? J Child Orthop 2011; 5(3):159-72
- 2 Sponseller PD, **Akbarnia B.A.**, Lenke LG, ET AL.: Pediatric Spinal Deformity: What Every Orthopaedic Surgeon Needs to Know; Instr Course Lect (United States), 2012, 61 P481-97
- 3 Yang J, Sponseller P, Thompson G, **Akbarnia B**, Emans J, Yazici M, Skaggs D, Shah S, Salari P, Poe-Kochert C; Growing Spine Study Group. Growing Rod Fractures: Risk Factors and Opportunities For Prevention. Spine. 2011 Sep 15;36(20):1639-44.
- 4 Cheung KM, Cheung JP, Samartzis D, Mak KC, Wong YW, Cheung WY, **Akbarnia B**, Luk KD. Magnetically Controlled Growing Rods for Severe Spinal in Young Children: A Prospective Case Series. Lancet. 2012 May 26;379(9830):1967-74. Epub 2012 Apr 19.
- 5 **Akbarnia B**, **Mundis G**, Salari P, Yaszay B, **Pawelek J**. Innovation in Growing Rod Technique: A Study of Safety and Efficacy of a Magnetically Controlled Growing Rod in a Porcine Model. Spine. 2012 Jun 1;37(13):1109-14.
- 6 Schroerlucke S, **Akbarnia B**, **Pawelek J**, Salari P, **Mundis G**, Yazici M, Emans J, Sponseller P. How Does Thoracic Kyphosis Affect Patient Outcomes in Growing Rod Surgery Spine. 2012 Jul 1;37(15):1303-9.



## RESEARCH PRESENTATIONS: ADULT SPINE

## A. Podium Presentations:

- 1 Stanton P, Nomoto E, **Kabirian N, Bruffey J, Mundis G, Akbarnia B, Eastlack R**. Analysis of Transposas Lateral Lumbar Interbody Fusion (LLIF) for the Treatment of Adult Lumbar Degenerative Spondylolisthesis (DS): A Radiographic Review. Society of Lateral Access Surgery, San Diego, CA, July 2012.
- 2 Nomoto E, Stanton P, **Kabirian N, Bruffey J, Pawelek J, Mundis G, Akbarnia B, Eastlack R**. Subsidence and Lumbar Sagittal Alignment Following Lateral Lumbar Interbody Fusion. Society of Lateral Access Surgery, San Diego, CA, July 2012.
- 3 **Akbarnia B, Mundis G Jr, Moazzaz P, Kabirian N, Bagheri R, Eastlack R, Pawelek J**. Anterior Column Realignment (ACR) For Focal Kyphotic Spinal Deformity Using a Lateral Transposas Interbody Approach and ALL Release. Society of Lateral Access Surgery, San Diego, CA, July 2012.
- 4 Moazzaz P, **Eastlack R, Bruffey J, Akbarnia B**. Symptomatic Intra-psoas Seroma Formation After Lateral Lumbar Interbody Fusion (LLIF) with Use of Recombinant Bone Morphogenetic Protein-2: A Report of Two Cases. Society of Lateral Access Surgery, San Diego, CA, July 2012.
- 5 Bess S, Line B, Boachie O, Hart R, Lafage V, Schwab F, **Akbarnia B**, Ames C, Burton D, Hostin E, Kebaish K, Klineberg E, Gupta M, **Mundis G**, Deviren V, O'Brien M, Wood, Shaffrey C, Smith J, International Spine Study Group. 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. International Meeting of Advanced Spine Technique, Istanbul, Turkey, July 2012. *Whitecloud Award Nomination for Best Clinical Research Paper.*
- 6 Ames C, Scheer J, Smith J, Gupta M, Klineberg E, Hart R, **Mundis G, Akbarnia B**, Burton D, Hostin E, O'Brien M, Shaffrey C, Bess S, Schwab F, Kebaish K, Deviren V, International Spine Study Group. Reoperation Rates and Impact on Outcome in a Large Prospective Multicenter Adult Spinal Deformity Database. International Meeting of Advanced Spine Technique, Istanbul, Turkey, July 2012.
- 7 Schwab, F.J., Bess, S., Blondel, B., Hostin, R., Shaffrey, C.I., Smith, J.S., Boachie-Adjei, O., Burton, D.C., **Akbarnia, B.A., Mundis, G.M.**, Ames, C.P., Kebaish, K., Hart, R.A., International Spine Study Group, Lafage, V.: Combined Assessment of Pelvic Tilt, Pelvic Incidence/Lumbar Lordosis Mismatch and Sagittal Vertical Axis Predicts Disability in Adult Spinal Deformity: A Prospective Analysis. 46<sup>th</sup> Annual Scoliosis Research Society, Louisville, Kentucky, September 2011.

## B. Poster Presentations:

- 1 Stanton P, Nomoto E, **Kabirian N, Bruffey J, Mundis G, Akbarnia B, Eastlack R**. Analysis of Transposas Lateral Lumbar Interbody Fusion (LLIF) for the Treatment of Adult Lumbar Degenerative Spondylolisthesis (DS): A Radiographic Review. International Meeting of Advanced Spine Technique, Istanbul, Turkey, July 2012.
- 2 Nomoto E, Stanton P, **Kabirian N, Bruffey J, Pawelek J, Mundis G, Akbarnia B, Eastlack R**. Subsidence and Lumbar Sagittal Alignment Following Lateral Lumbar Interbody Fusion. International Meeting of Advanced Spine Technique, Istanbul, Turkey, July 2012.
- 3 **Akbarnia B, Mundis G, Moazzaz P, Kabirian N, Bagheri R, Eastlack R, Pawelek J**. Anterior Column Realignment (ACR) For Focal Kyphotic Spinal Deformity Using a Lateral Transposas Interbody Approach and ALL Release. Society for Minimally Invasive Spine Surgery, Las Vegas, NV, October 2011.
- 4 **Akbarnia B, Mundis G, Bagheri R; Kabirian N, Salari P, Pawelek, J**. Is the less invasive far lateral approach a safe way to reconstruct the anterior spinal column in advanced adult deformity surgery? A minimum 2-year follow-up study. Scoliosis Research Society, Louisville, KY, September 2011.
- 5 Uribe J.S, Smith D, Dakwar E, Baaj A, **Mundis G**, Turner A.W, Cornwall B, Akbarnia, B. Lordosis Restoration After Anterior Longitudinal Ligament Release and Placement of Lateral Hyperlordotic Interbody cages During the MIS Lateral Transposas Approach. International Meeting of Advanced Spine Technique, Istanbul, Turkey, July 2012.
- 6 **Mundis G**, Terran J, Deviren V, Ames C., Gupta, Burton D, International Spine Study Group. Risk Factors in Predicting Early Post-Operative Coronal Imbalance in Adult Spinal Deformity Patients: A Multicenter Analysis. International Meeting of Advanced Spine Technique, Istanbul, Turkey, July 2012.
- 7 Moal B, Schwab F, Ames C, Smith J, **Mundis G**, Terran, Klineberg, Hart R, Boachie O, Shaffrey C, Lafage V, International Spine Study Group. Radiographic Outcomes of Spinal Deformity Correction in Adult Patients: A Critical Analysis of Variability and Failures Across Deformity Patterns; International Meeting of Advanced Spine Technique, Istanbul, Turkey, July 2012



- 8 Ames C, Scheer J, Deviren V, Smith J, Bess S, Hostin R, Klineberg E, Hart R, **Mundis G**, O'Brien M, Shaffrey C, Lafage V, Kebaish K, Schwab F, International Spine Study Group. Effect of Upper Instrumented Vertebra (UIV) On Adult Spinal Deformity (ASD) Correction, Maintenance of Correction, and Health Related Quality of Life (HRQOL) Following Lumbar Pedicle Subtraction Osteotomy (PSO). International Meeting of Advanced Spine Technique, Istanbul, Turkey, July 2012.
- 7 McElroy M, Sponseller P, Yazici M, **Akbarnia B**, Thompson G, Skaggs D, Emans J, **Pawelek J**; Growing Spine Study Group. Operative Idiopathic Early Onset Scoliosis and AIS Curves Have Different Characteristics. International Congress on Early Onset Scoliosis, Orlando, FL, November 2011.
- 8 Yaszay B, **Kabirian N**, **Pawelek J**, Emans J, Johnston C, Shah S, **Mundis G**, **Akbarnia B**, Growing Spine Study Group. Beware the Risks of Instrumenting to the Pelvis in Ambulatory Early Onset Scoliosis Patients Treated with Growth Sparing Surgery. Scoliosis Research Society, Louisville, KY, September 2011.

## RESEARCH PRESENTATIONS: PEDIATRIC SPINE

### A. Podium Presentations:

- 1 **Akbarnia B**, Cheung K, Noordeen H, Elsebaie H, Yazici M, Dannawi Z, **Kabirian N**. Next Generation of Growth-Sparing Techniques: Preliminary Clinical Results of a Magnetically Controlled Growing Rod in 14 Patients. International Congress on Early Onset Scoliosis, Orlando, FL, November 2011; Pediatric Orthopedic Society of North America, Denver, CO, May 2012.
- 2 **Mundis G**, Nomoto E, Hennessey M, **Pawelek J**, **Akbarnia B**. Longitudinal Analysis of Radiation Exposure During the Course of Growing Rod Treatment for Early Onset Scoliosis. International Congress on Early Onset Scoliosis, Orlando, FL, November 2011; International Meeting of Advanced Spine Technique, Istanbul, Turkey, July 2012.
- 3 Cheung, K, Cheung J, Samartzis D, Mak, K, Wong Y, Cheung W; **Akbarnia, B**, Luk K. The Safety and Efficacy of a Remotely Distractible, Magnetic Controlled Growing Rod (MCGR) for the Treatment of Scoliosis in Children: A Prospective Case Series with Minimum 2 year Follow-Up. International Meeting of Advanced Spine Technique, Istanbul, Turkey, July 2012.
- 4 McElroy M, Sponseller P, Dattilo J, Thompson G, **Akbarnia B**, Growing Spine Study Group. A Critical Assessment of Growing Rods for the Treatment of Pediatric Scoliosis in Cerebral Palsy. International Congress on Early Onset Scoliosis, Orlando, FL, November 2011; Pediatric Orthopedic Society of North America, Denver, CO, May 2012; International Meeting of Advanced Spine Technique, Istanbul, Turkey, July 2012.
- 5 **Akbarnia B**, **Kabirian N**, **Zhang D**, **Pawelek J**, Redding G, Emans J, Shah S, Johnston C, Growing Spine Study Group. Is There a Significant Increase in Thoracic Height after Growing Rod Surgery for Early Onset Scoliosis? International Congress on Early Onset Scoliosis, Orlando, FL, November 2011.
- 6 **Akbarnia, B**, **Kabirian N**, **Pawelek J**, Alam M, **Mundis G**, Acacio R, Thompson G; Marks D, Gardner A, Skaggs D, Growing Spine Study Group. Deep Surgical Site Infection Following Growing Rod Surgery in Early Onset Scoliosis: How Does It Change the Course of Treatment? International Congress on Early Onset Scoliosis, Orlando, FL, November 2011.
- 9 Yamaguchi K, Skaggs D, Myung K, Mansour S, Yazici M, Johnston C, Thompson G, Sponseller P, **Akbarnia B**, Vitale M; Are Proximal Rib Anchors Protective Against Rod Breakage in Distraction-Based Growing Rods? International Meeting of Advanced Spine Technique, Istanbul, Turkey, July 2012.
- 10 McElroy, M., Sponseller, P.D., Dattilo, J.R., Thompson, G.H., **Akbarnia, B.A.**, Shah, S. A., Snyder, B.D., Growing Spine Study Group; A Critical Assessment of Growing Rods for the Treatment of Pediatric Scoliosis In Cerebral Palsy; International Meeting On Advanced Spine Techniques Istanbul, Turkey, July 2012. *Whitecloud Award Nomination for Best Clinical Research Paper.*
- 11 Brendan A. Williams, **Behrooz A. Akbarnia**, Randal R. Betz, Laurel C. Blakemore, John M. Flynn, Charles E. Johnston, MD; Richard E. McCarthy; John T. Smith, MD; Brian D. Snyder, Paul D. Sponseller, Peter Sturm, George H. Thompson, Muharrem Yazici, Michael Vitale, David P. Roye. Introducing the Early Onset Scoliosis Classification System: International Meeting on Advanced Spine Techniques Istanbul, Turkey, July 2012



*Poster Presentations:*

- 1 **Akbarnia B**, Cheung K, Noordeen H, Elsebaie H, Yazici M, Dannawi Z, **Kabirian N**. Next Generation of Growth-Sparing Techniques: Preliminary Clinical Results of a Magnetically Controlled Growing Rod in 14 Patients. Scoliosis Research Society, Louisville, KY, September 2011; Society for Minimally Invasive Spine Surgery, Las Vegas, NV, October 2011.
- 2 **Mundis G**, Nomoto E, Hennessey M, **Pawelek J**, **Akbarnia B**. Longitudinal Analysis of Radiation Exposure During the Course of Growing Rod Treatment for Early Onset Scoliosis. Scoliosis Research Society, Louisville, KY, September 2011.
- 3 Altaf, F., Sedra, F., Noordeen, H., **Akbarnia, B.**: Pulmonary Function In Patients With Early Onset Scoliosis Undergoing Treatment With Growing Rods. 5th International Congress on Early Onset Scoliosis and Growing Spine, Orlando, FL, November 2011.
- 4 El sebaie H, Noordeen H, **Akbarnia B**. Incidence, Magnitude and Classification of Pedicle Screw Migration. International Meeting of Advanced Spine Technique, Istanbul, Turkey, July 2012.
- 5 **Akbarnia B**, **Kabirian N**, **Zhang D**, **Pawelek J**, Redding G, Emans J, Shah S, Johnston C, Growing Spine Study Group. Is There a Significant Increase in Thoracic Height after Growing Rod Surgery for Early Onset Scoliosis? International Congress on Early Onset Scoliosis, Orlando, FL, November 2011; International Meeting of Advanced Spine Technique, Istanbul, Turkey, July 2012.
- 6 **Akbarnia, B**, **Kabirian N**, **Pawelek J**, Alam M, **Mundis G**, Acacio R, Thompson G; Marks D, Gardner A, Skaggs D, Growing Spine Study Group. Deep Surgical Site Infection Following Growing Rod Surgery in Early Onset Scoliosis: How Does It Change the Course of Treatment? Pediatric Orthopedic Society of North America, Denver, CO, May 2012.
- 7 Myung K, Lee C, Wall E, Jain V, Shah S, Johnston C, **Akbarnia B**, Skaggs D, Growing Spine Study Group. Hemoglobin Levels in Patients with Early Onset Scoliosis Treated with Growing Rods. International Congress on Early Onset Scoliosis, Orlando, FL, November 2011.
- 8 McElroy M, Sponseller P, Yazici M, **Akbarnia B**, Thompson G, Skaggs D, Emans J, **Pawelek J**, Growing Spine Study Group. Operative Idiopathic Early Onset Scoliosis and AIS Curves Have Different Characteristics. International Meeting of Advanced Spine Technique, Istanbul, Turkey, July 2012.
- 9 Yaszay B, **Pawelek J**, **Kabirian N**, Bastrom T, Emans J, Thompson G, McCarthy R, **Mundis G**, **Akbarnia B**, Growing Spine Study Group. The Value of Flexibility Radiographs in Predicting Coronal Curve Correction Following Growing Rod Surgery. International Congress on Early Onset Scoliosis, Orlando, FL, November 2011.
- 10 Yaszay B, **Kabirian N**, **Pawelek J**, Emans J, Johnston C, Shah S, **Mundis G**, **Akbarnia B**, Growing Spine Study Group. Beware the Risks of Instrumenting to the Pelvis in Ambulatory Early Onset Scoliosis Patients Treated with Growth Sparing Surgery. International Congress on Early Onset Scoliosis, Orlando, FL, November 2011.
- 11 Yaszay B, **Kabirian N**, **Pawelek J**, Bastrom T, Emans J, Johnston C, Thompson G, **Mundis G**, **Akbarnia B**, Growing Spine Study Group. What Do Coronal Flexibility Films Really Tell Us About the Treatment of Idiopathic Early-onset Scoliosis Patients Using Growing Rods? International Meeting of Advanced Spine Technique, Istanbul, Turkey, July 2012.
- 12 Yamaguchi K, Skaggs D, Myung K, Mansour S, Yazici M, Johnston C, Thompson G, Sponseller P, **Akbarnia B**, Vitale M. Are Rib Anchors Protective Against Rod Breakage in Distraction-Based Growing Rods? International Meeting of Advanced Spine Technique, Istanbul, Turkey, July 2012.
- 13 Schwend R, Blakemore L, **Akbarnia B**, Reigut J, Schmidt J, Complex Spine Study Group. Coupled Symmetry and Proportional Expansion of the Ribs Through Adolescence. International Meeting of Advanced Spine Technique, Istanbul, Turkey, July 2012.
- 14 Lebl, D.R., Boachie-Adjei, O., **Akbarnia, B.A.**, Gogia, J., Krajchich, J.I., Woo, R, Rahm, M.D, King, A.B., Cunningham, M.E.: Anterior Vs Posterior Surgery for Lenke 5 Adolescent Idiopathic Scholiosis: Clinical and Radiographic Outcomes. American Academy of Orthopaedic Surgeons Annual Meeting, San Francisco, California, February 2012.
- 15 Woo, R.W., Blakemore, L.C., Trammell, T.R., Moore, J., Yaszay, B., Ginsburg, G.M., Perez-Grueso, F.J., Kishan, S., Boachie-Adjei, O., **Akbarnia, B.A.**, Strauss, K., Complex Spine Study Group: A Comprehensive Nomenclature for Standardized Radiographic Measurements of Vertebral Morphology. 19th International Meeting on Advanced Spine Technologies, Istanbul, Turkey, July 2012.

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

## RESEARCH PRESENTATIONS: BASIC SCIENCE

### A. Podium Presentations:

- 1 Schroerlucke S, **Eastlack R**, Steklov N, **Akbarnia B**, **Mundis G**, Marino J. Biomechanical Testing of Pedicle Screws: Polyaxial, Monoaxial, and a Novel Uniplanar Design. Society for Minimally Invasive Spine Surgery, Las Vegas, NV, October 2011.

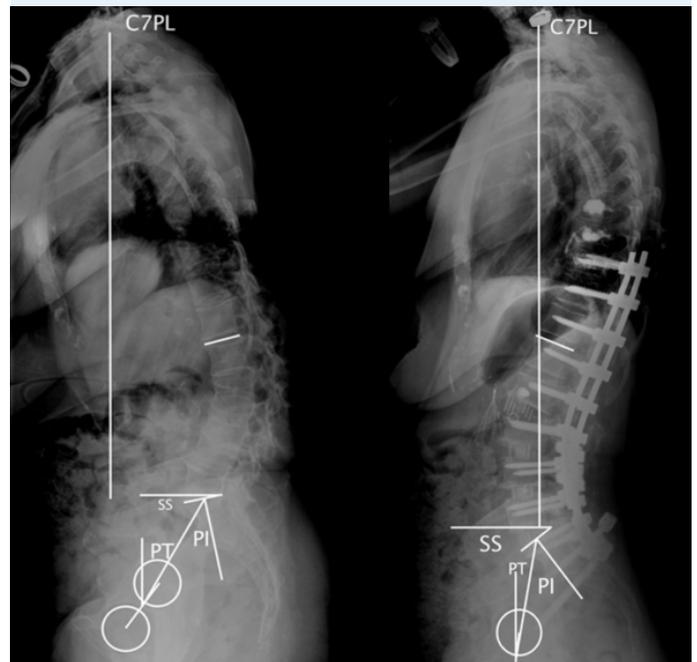
### B. Poster Presentations:

- 1 **Mundis G**, **Eastlack R**, Moazzaz P, Turner A, Cornwall B. Contribution of Round vs. Rectangular Expandable Cage Endplates to Spinal Stability in a Cadaveric Corpectomy Model (XCORE). Society for Minimally Invasive Spine Surgery, Las Vegas, NV, October 2011.
- 2 Grogan S, Hennessy M, Chen X, Sovani S, D'Lima D, **Eastlack R**. Isolation of Osteogenic Cell Populations from Bone Fragments Harvested During Lumbar Spine Fusion Procedures. Orthopedic Research Society, San Francisco, CA, February 2012.
- 3 **Akbarnia B**, Yaszay B, Yazici M, **Kabirian N**, Strauss K, Glaser D. Biomechanical Evaluation of 4 Different Foundation Constructs Commonly Used in Growing Spine Surgery: Are Rib Anchors Comparable to Spine Anchors? International Meeting of Advanced Spine Technique, Istanbul, Turkey, July 2012.

*“The Foundation has developed a strong program both in clinical as well as laboratory research.*

*As you will note in our research report, the results of these projects are presented in many meetings throughout the world.”*

## Innovation



**Anterior Column Realignment (ACR)** is a technique to restore stooped forward posture through minimally invasive techniques. It was first described by Akbarnia et al in 2012. The concept is to use mobile disc spaces in the anterior spine to create an angular correction without the need to do a much more invasive posterior-based surgery called osteotomy. The preliminary results are very encouraging and were recently accepted for publication in the Journal of Spinal Disorders and Techniques.



Research in Biomechanical Laboratory

## RESEARCH STAFF

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Above: 2012 San Diego City-Wide Spine Conference



*“Our faculty has begun to donate their time and talent by giving back to underserved regions of the world in Africa, the Middle East and other countries where service is needed.”*



**Example Education Programs in 2012**

International Congress on Early Onset Scoliosis and Growing Spine (ICEOS). November 18-19, 2011. Orlando, FL.

San Diego City-Wide Spine Conference and Visiting Professorship. June 22, 2012. San Diego, CA

Scoliosis Research Society Surgical Tutorial: Lateral Approach for Adult Spinal Deformity. August 19, 2011 and July 6, 2012. San Diego, CA

Instructional Course Lectures at different national meetings including the American Academy of Orthopaedic Surgeons and the Scoliosis Research Society

Weekly Conferences for Fellows and San Diego Medical Community

mentor  
pediatric  
growing rod  
adult  
disc disease  
share  
pelvis  
sacro  
teach  
fusion  
outreach  
heal  
scoliosis

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[www.sandiegospinefoundation.org](http://www.sandiegospinefoundation.org).

fostering excellence in spinal education and research



San Diego  
Spine Foundation

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