

# 2016 Annual Report

Academic Year

August 2015 – July 2016



San Diego   
Spine Foundation  
Established in 2006



FOSTERING EXCELLENCE IN SPINAL EDUCATION, RESEARCH AND OUTREACH

## Note From The President and Founder



*Dear Friends and Family of the San Diego Spine Foundation,*

*It seems like I just wrote my note for last year's annual report, and yet here I am again reflecting gratefully upon the past year.*

*The success of our Foundation is not due to any one person. We have been able to achieve what we have, thanks to collaborative efforts among our sponsors, donors, and volunteers, including our Board of Directors, faculty, research, clinical, and fellowship staff. I want to thank each and every person who has helped us to pursue and expand upon our ultimate goal and mission to improve the quality of our patients' lives.*

*This year's annual report is dedicated to our Board of Directors, for having the wisdom to see the potential our organization has for its future. During our 2016 Strategic Planning Meeting, our Board agreed to add Outreach to our mission statement. Members of our faculty, including Don Blaskiewicz and Greg Mundis, Jr., had already started traveling to Africa and Mexico to provide spine care to those in need, followed by our past fellow Eddie Nomoto, who has become a regular Surgeon Volunteer. I also accompanied the Global Spine Outreach (GSO) in December 2015 and again this past August in our combined GSO and SDSF mission trip. Pat Kostial made her first trip to Mexico also in August and her experience is chronicled in our feature article, "Building Bridges," in this report.*

*Of course, our strength has been and continues to be research, so it is our hope to provide our unique expertise in this area and help to develop special research tools for our outreach programs. As a result, I'm so pleased and looking forward to our joint effort with GSO, of raising funds to build and manage a platform that will serve both as a registry and a research tool to track patient outcomes in our outreach programs.*

*On the education side, our Annual Visiting Professorship meeting continues to evolve and improve. We thank Christopher M. Bono, MD, 2016 President of the North American Spine Society, who served as our 2016 Visiting Professor and to Bob Eastlack and Daniel Green, who served as our Co-Chairmen. Well done, gentlemen! Our meeting was very well attended by all San Diego institutions represented and supported by our sponsors. We are already well underway with plans for our 2017 Annual Meeting, which will feature Todd J. Albert, MD, FACS, the President-Elect of the Scoliosis Research Society as our Visiting Professor, and with Steven R. Garfin, MD, Distinguished Professor and Chairman of the Department of Orthopaedic Surgery at UCSD, as our program's Co-Chairman with Greg Mundis, Jr. It is our hope to continue to build bridges of collaboration in education, research, and outreach, both here in San Diego and abroad.*

*All of these developments keep me excited and optimistic about the future of our organization and the services we will be able to provide the spine community for the betterment of patient care. It remains an honor to serve as Founder and President of the San Diego Spine Foundation.*

*Behrooz A. Akbarnia*

Behrooz A. Akbarnia, MD

## San Diego Spine Foundation Board of Directors



**Behrooz A. Akbarnia, MD**  
*President, Board of Directors  
Director Emeritus and  
Faculty Member,  
Spine Fellowship Program*



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*Treasurer; Board of Directors  
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Spine Fellowship Program*



**Sarah E. Aghassi, Esq.**  
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**Gregory M. Mundis, Jr., MD**  
*Member, Board of Directors  
Co-Director and  
Faculty Member,  
Spine Fellowship Program*



**Robert K. Eastlack, MD**  
*Member, Board of Directors  
Co-Director and  
Faculty Member,  
Spine Fellowship Program*



**Jeff Pawelek, BS**  
*Member, Board of Directors  
Research Director*

## Additional Members of the Faculty



**Ramin Bagheri, MD**  
*Faculty, San Diego Spine Fellowship  
Scripps Clinic,  
La Jolla, CA*



**Maneesh Bawa, MD**  
*Faculty, San Diego Spine Fellowship  
San Diego Orthopaedic Associates Medical Group,  
San Diego, CA.*



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



**Donald Blaskiewicz, MD**  
*Faculty, San Diego Spine Fellowship  
Neurosurgical Medical Clinic,  
San Diego, CA.*

## San Diego Combined Spine Fellowship Program Fellowship Co-Directors Message 2015-16

We are very pleased to report on our 2015-16 academic year. Despite challenges which dropped our number of full-time fellows from 2 to 1, we had a great year with our graduating fellows, including Rajiv Saigal, MD, PhD, who is now settled into his new role as Assistant Professor of Neurosurgery at University of Washington in Seattle. Ravi Srinivas, MD is now at UCLA completing a Foot and Ankle Fellowship. We wish them both the very best as they move forward into the next phase of their careers.

We are now back to 2 full-time clinical fellows with Justin Ledesma, MD joining us from Stanford University and Amrit Khalsa, MD from Drexel University. They are the first to have a one-week mission trip to Mexico added to their curriculum. With our foundation's new addition of Outreach to its mission, including our fellows in this mission seemed like the right thing to do.

Finally, we are pleased to announce we will have 3 full-time clinical fellows in 2017-18 including Eric Varley, DO from Michigan State University and Nick Ghazarian, DO from Valley Hospital Medical Center, as well as a PGY-6 Neurosurgery resident, Randall Hlubek, MD from Barrow Neurological Institute. Each year, our faculty is invigorated by our fellows to do and to be our very best as we attempt to pass the torch to future surgeons in the field of spine surgery.

*Robert K. Eastlack, M.D.*

*Gregory M. Mundis, Jr., MD*

## A Unique Journey for Change



It has certainly been a great honor for me to conduct research at San Diego Spine Foundation (SDSF) under the auspices of spine surgery legend Dr. Behrooz Akbarnia and his motivated, professional, and very experienced team since April 2014. In addition to many unique experiences and achievements while at SDSF, I can very proudly add “the first recipient” of SDSF individual research grant to my resume.

There is a strong interest in cutting edge research at SDSF, so it was easy for me to feel it, even at the beginning of my fellowship. This positive atmosphere encouraged me to look back at my research ideas notebook and pick one: “Rescrubbing Technique” to be discussed in front of the panel as a possible research opportunity. The rescrubbing idea was very simple, but at the same time, it was a potentially practice changing study. I hypothesized a single hand scrub at the beginning of long operations would not keep the surgeon’s hands clean forever and at some point, the surgeon’s hands would get recolonized and could become a continuous source of contamination, possibly leading to surgical site infection, and thus justifying rescrubbing at that point in time.

Knowing the depth of historic challenges and even the animosity that pioneers of hand hygiene, such as Ignaz Semmelweis, faced made me very concerned as a young researcher on how to present this study in front of an entire panel of surgeons for my first SDSF research proposal. As a result, I decided to ask the opinion of foundation Research Director, Jeff Pawelek, BS. With years of experience in research, Jeff’s eyes are very sharp in picking novel ideas. Luckily, he liked the study idea and gave me his full support. Along with Stacie Nguyen, MPH (Manager of Fellowship Research) and Jeff’s support, we prepared the proposal, which was presented to the panel. Surprisingly, not only did the entire panel support the idea, but also they approved SDSF’s first ever-individual research grant for this study.



*Kristina Goerke MBA, CLS, MT (technical coordinator of the Bacteriology Department, Scripps Medical Laboratory, San Diego, CA, USA) performing microbiological culture on scrubbing samples at Scripps Medical Laboratory.*

The amazing support by Dr. Behrooz Akbarnia, Dr. Gregory Mundis, Dr. Robert Eastlack, and Pat Kostial, RN, BSN made the study possible at Scripps Green Hospital Microbiology lab over a five-month period. Interestingly, results revealed that scrubbed hands show detectable recolonization after 5 hours continuous operation. Our study recommendation stated rescrubbing is advisable at some point between 4 and 5 hours post initial-scrub (and every 4 hours thereafter).

The results of the study were very well received by Clinical Orthopedics and Related Research (CORR) Journal and the manuscript was accepted for publication on its first submission <sup>1</sup>. The study received podium presentations at LAPD, BritSpine, POSNA, LSRS, and IMAST in 2016.

# RESEARCH

## Fellow's Weekly Spine Conference



Weekly Fellow's spine conferences take place at Scripps Green Hospital both in the Department of Orthopedic Surgery as well as monthly Open Conference in the Timken Amphitheater, allowing members of industry to attend lectures and case presentations.



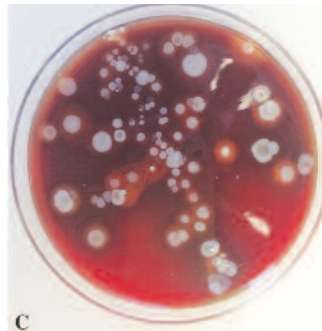
In addition, the Rescrubbing abstract was nominated for awards at 2016 BritSpine in Nottingham, England, UK and at 2016 IMAST in Washington DC, USA.

There were a few lessons for me from this successful experience at SDSF. First of all, this experience was an endorsement to the importance of team work. I learned

that the successful implementation of a genuine idea is only possible through working with a group of people who share the same passion. Certainly, SDSF was the perfect place for my idea. Secondly, I learned the lesson of simplicity.

Simple ideas sometimes can make bigger impressions on minds than those that are complicated. The final lesson was the importance of “WHY”. We repeatedly hear asking why is important, and, “juniors” are always encouraged to ask why. However, in reality, there aren’t many places where “the powers that be” approve of asking why. Based on my experience, SDSF is not only one of those centers that is open to change, but it’s team continually challenges me to ask why.

Of note, due to the overwhelming response to my original project, I’m working on a phase 2 study and hope to report on that next year.



An example of blood agar dish showing a positive culture after 8 hours in surgery

If one day in the future I hear a circulating nurse in the OR announce “RESCRUBBING TIME” as part of the facility’s infection control protocol, I will remember all of my great experiences from this study, and whisper “Thank You, San Diego Spine Foundation”.

**Pooria Hosseini, MD, MSc**  
**SDSF Research Fellow**  
**References**

<sup>1</sup> Hosseini P, Mundis GM, Eastlack RK, Nourian A, Pawelek J, Nguyen S, Akbarnia BA. Do Longer Surgical Procedures Result in Greater Contamination of Surgeons’ Hands? *Clinical Orthopaedics and Related Research*. 2016;474(7):1707-13.

**SDSF International Visiting Surgeons and SRS Fellows**

SDSF Fellowship Program is pleased and honored to have a regular presence of International Surgeon Fellows and Observers. Some come for weeks and others for months. The mentorships and friendships are life-long. We look forward to visitors in 2016-2017 from Mexico, Nepal, Italy and Japan.



Scoliosis Research Society Traveling Fellows visit SDSF Office during their 3 week trip across North America. From Left: Stacie Nguyen, Jeff Pawelek, Bangping Qian, Keith Luk, Kota Watanabe, Ilharborde Brice and Pooria Hosseini.



Visiting fellows Gabriel Schmidt and Kiyoshi Miyazaki with Research Fellow Pooria Hosseini, Research Director Jeff Pawelek and SDSF president Behrooz Akbarnia



Visiting fellows Gabriel Schmidt and Kiyoshi Miyazaki with Behrooz Akbarnia

## Building Bridges

*It's been an honor to serve San Diego Spine Foundation as its Director for another year. Our organization has been very blessed this year with a continued team effort from our board members, faculty, staff, fellows and volunteers. I'm very proud to present my outreach article below. It is my hope that this article will move you and inspire you to give of yourself. I can tell you first hand, it will provide you the greatest sense of fulfillment and the desire to continue giving.*



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I would fathom a guess that for many who receive the call to go into the healthcare field, this call includes the drive to do something bigger than oneself; to make a difference somehow. Unfortunately, life gets in the way and the dream of a mission trip or doing extensive community service often fades in the wake of our daily grind.

Fortunately for us all, there are some who are so driven to this call that they both act on it and then go even farther by establishing organizations and facilities to help serve those in need in areas of the world where routine healthcare is

## HEART

virtually nonexistent. I can say this proudly about some of our fellow Scoliosis Research Society (SRS) members who have done just that through SRS outreach programs. One such organization, Global Spine Outreach (GSO), founded and lead by SRS member Anthony Rinella, MD and Executive Director Bridget Mortell, has established a presence in Columbia, Mexico and Poland thus far. This organization and its medical team provide lifesaving spine care to the neediest children in those regions.

As we approached our 10<sup>th</sup> anniversary as a nonprofit organization, the San Diego Spine Foundation leadership felt this call for our organization as well. Though we've been very successful with our mission thus far, we felt we could do much more. SDSF board member Gregory M. Mundis, Jr., MD is no stranger to the call, with numerous trips under his belt. Dr. Mundis recently became involved with GSO and is now taking on the challenge of running the Mexico program along with the GSO leaders in the U.S. and Mexico. Because of Greg's desire to expose our fellows to this important calling, SDSF has responded by adding a one-week surgical rotation to Mexico during their academic training. Clinical Fellow

Justin Ledesma, MD was our first clinical fellow to participate during the August trip to Chihuahua, Mexico and Amrit Khalsa, MD will be our next, with his trip in March.

However, we believed this wasn't enough. Our leadership felt compelled to formally add Outreach to its mission statement, and thus forge a stronger level of commitment. With that said, our president Behrooz A. Akbarnia, MD participated on a trip to Chihuahua last December, 2015 and was so moved by the experience, he again signed up for the August trip.

SDSF also believed it could offer additional service from our area of expertise, which is largely research-based. As a result, we proposed to GSO a first ever combined fundraiser to help raise funds to support the development of a badly needed computer program for recording patient care, establishing a patient registry as well as collecting and querying basic research data in order to study outcomes. GSO agreed. Our organizations are so pleased to announce that this ground breaking fundraiser will be held on Saturday, December 3, 2016 in La Jolla, California.

In last year's Annual Report, we featured an article by past fellow Edward Nomoto, MD who wrote of his first-hand experience in Chihuahua. Frankly, I was so moved, I knew I had to experience this first hand. I hoped that I could help in some small way to make a difference. As a result, I volunteered for GSO's August trip to Chihuahua, Mexico. My experience was truly beyond words, so I hope to do it justice in the paragraphs to follow.

**THE FIRST DAY:** Our first day was a travel day for the GSO and SDSF volunteers. Most arrived via U.S. based flights from Tijuana/San Diego or Dallas, while 3 Mexican-based surgeons traveled from Monterey and Mexico City. We convened for a team building goodie bag assembly session at the Hampton Inn Hotel, our home base for the week. Volunteers had brought with them crayons, pencils, notepads, stickers, small games and toys plus candy, all to fit into clear cellophane bags, one for each child to be seen during the week's clinics.



*Dr. Akbarnia and Pat Kostial with GSO Mexico Director, Carolina Jaidar Lopez, Fernanda De La Vega of Christus Muguerza and past fellow Eddie Nomoto, MD of Cedars Sinai Spine Center*

In addition, U.S. based patients/parents and groups donated blankets and quilts as well as stuffed animals, many hand-made with love specifically for our trip. Some stuffed animals came with rods inserted below the fur on their backs for the children having spinal fusion surgery. All these items were collected in preparation for distribution during the week to come.

Then, we were off for the first of our team dinners, a great opportunity for us all to get to know each other, especially those like me who were attending for the first time, trying to figure it all out. Our group clicked immediately and friendships formed early. Our team was largely comprised of surgeons, neurophysiologists, a PA, RNs, Spine Industry representatives and administrative volunteers from California, Texas, Illinois, New York and Maryland to help with the extraordinary work and administrative tracking that is needed for each trip. We were greeted by Carolina “Caro” Jaidar Lopez, GSO’s newly appointed Director for Mexico. Caro immediately went to work to make us all feel welcome and special.



**THE CLINICS:** Christus Muguerza Hospital Del Parque graciously agreed again to be the host facility for all clinics and surgeries that week. Without their generosity, as well as the generosity of spine industry from

which all the spine implants and biologics were provided for surgery, this trip could not happen.



First SDSF Clinical Fellow to attend mission trip. From left, Justin Ledesma with Behrooz Akbarnia, Gregory Mundis, Jr., Monterrey, Mexico spine surgeon Enrique Mendez and past SDSF Fellow Eddie Nomoto

We started our Sunday very early and spent the day evaluating both new and returning children with spinal deformities. Clinical photos, x-rays and a detailed history and physical were performed on each child to determine the children most in need for surgery that week. By the end of a long day, we had seen over 40 patients, and 76 in all by the end of the week. The patient selection process can be heart breaking, as only so many cases can be done safely during one week, far less than those who need it, who were then placed on a waiting list. This selection is further compounded by the challenges of having enough surgical implants for those children most in need of surgery. I was in awe of the sheer



Dr's Akbarnia and Mundis examine Diana in clinic following a body cast removal. A new cast to control her scoliosis will be applied later in the week.

amount of severe spinal deformity we saw in a single day. But more than that, I was blown away by the love of the patients, their families and the volunteers for each other. Despite what was a grueling schedule for even the youngest, most fit members of our group, this love and positive energy fed us emotionally and spiritually and saw us through to the end.

**THE PATIENTS:** GSO is able to attract children from across Mexico, many of whom have flown into Chihuahua from other Mexican states to be evaluated. The ages ranged from infant to adult, with the majority in their late childhood and early adolescent years. The deformities seen ranged from the very common idiopathic type scoliosis (meaning the cause of scoliosis is unknown) to ultra-severe deformities of the spine that seemed to defy gravity. Some walked and others, due to their complex medical conditions, were wheelchair bound. The main goal for treating all these patients was to improve their quality of life, even if it simply meant being able to sit. Such a change in position can be profound for the parent or family member who cares for their child every day. I'll share 2 patient stories with you shortly.

**THE SURGERIES:** Beginning Monday and continuing daily through Friday, surgeries and body-cast applications were scheduled, with an average of 3 cases per day, utilizing 2 of the hospital's operating rooms and staff. Each day also included rounds to see patients who had undergone surgery as well as additional clinics, staff meetings and educational offerings. We'd frequently see large numbers of family members waiting patiently for word on their child's surgery. Again, the love and gratitude for providing their child a potentially life-saving surgery frequently had us on the verge of tears along with the family.



Behrooz Akbarnia and past Fellow Eddie Nomoto work with Enrique Rosales

During this time, the bond between volunteers, hospital staff and residents grew as well as among the volunteers themselves. Area orthopedic surgery residents and medical students found a new appreciation for the management of spinal disorders, something that is not very visible in their current curriculum. They participated in surgeries, rounded with the GSO surgeons and attended lectures provided by the group throughout the week. The hospital's nursing staff was also invited to attend talks on spine care and the background on scoliosis as well as to attend rounds and learn ways to improve nursing care for their patients. Volunteers worked together to develop printed protocols and patient discharge instructions, which were then translated them into Spanish by the Spanish speaking RN members of the GSO team. By the end of the week, we all walked the floors of the hospital with big smiles, unable to contain the joy that we all felt.

Were the days unbelievably long? Oh yes. We were exhausted? You bet. But, that continuous feeling of love, support and positive energy kept us going.

# ALEJANDRA

As is sometimes the case, a clinic will get a walk-in patient, someone who did not have a scheduled appointment. Alejandra is one such patient. She and her father arrived at the hospital on Tuesday after hearing about our group's presence in Chihuahua by word of mouth from a neighbor who has a child in the program. Tuesday was a major surgery day; all our surgeons were busy in the O.R. Lesley Mundis and I were asked to screen Alejandra to see if she was a candidate. I'm not surprised very often, but I was astounded to see the severity of Alejandra's curve.



*Alejandra's preoperative physical exam and spine x-ray.*

Her father reported that her scoliosis was only discovered by her family 6-7 months earlier. At that time at age 11, she was seen by a local physician who told her father there was nothing he could do, she should stop all physical activity due to risk of injury to her spine. Nothing else was offered and her father felt hopeless.



*Immediate postoperative x-ray in the operating room*

Alejandra, being an active pre-teen, is an avid soccer player. She's your typical 11-year-old who attends middle school, adores her cat and loves to play pranks on her family and friends. Her smile is infectious. For this child to be told to stop living was beyond comprehension. Alejandra's mother is no longer in her life, but her father and grandmother are a strong positive presence for her and they took a chance that Tuesday, praying for a miracle.

Our screening discovered a healthy child with a rapidly worsening idiopathic-type scoliosis. New x-rays were compared to those taken 6 months earlier and found an astounding 30° of progression and worst yet, she was still actively growing. To place her on a waiting list was not an option, for at that

rate, her 80+ degree curve would be well over 100° by the time the next mission trip would take place. Tough decisions were made and schedules rearranged. Alejandra was on the Operating Room schedule 2 days later. After successful surgery, her curve was corrected to nearly zero degrees.



*Alejandra recovering from her surgery one day later.*

At her bedside the day after surgery, Alejandra's father stated that his daughter's treatment was "nothing short of a miracle. It was destiny" to hear about GSO and then have treatment within days of first being seen. Alejandra was very happy despite her post-surgical pain. Her scoliosis had been treated and she can now plan to resume her life and play soccer one day soon. Later that day, we met Alejandra's grandparents for the first time. We all shed tears of joy as they thanked the team for helping their granddaughter have a chance for a happy, healthy life.

## More Stories from Chihuahua.

Read Karen's story on our website at [www.sandiegospinefoundation.org](http://www.sandiegospinefoundation.org)



## Take Home Message:

To summarize my first of what I hope to be many future outreach trips, I've given and received more hugs that week than I can remember. The love that is felt between patients/families and volunteers, as well as between volunteers, is incredible. It takes individuals, organizations and donors who can open their hearts and give of themselves to make these lifesaving trips possible. I'm very proud of everyone's efforts at GSO and SDSF to help make these trips possible and I'm humbled to have played a small part in this experience. I couldn't agree more, it was life-changing.



*Alejandra's father thanks Dr. Mundis after surgery.*

*If you believe you can help children like Karen and Alejandra, won't you consider helping? No donation is too big or small. Every dollar helps us to fulfill our mission.*

*Visit: [sandiegospinefoundation.org/donate](http://sandiegospinefoundation.org/donate) and list "Outreach" on your donation memo.*





# LOKI'S STORY



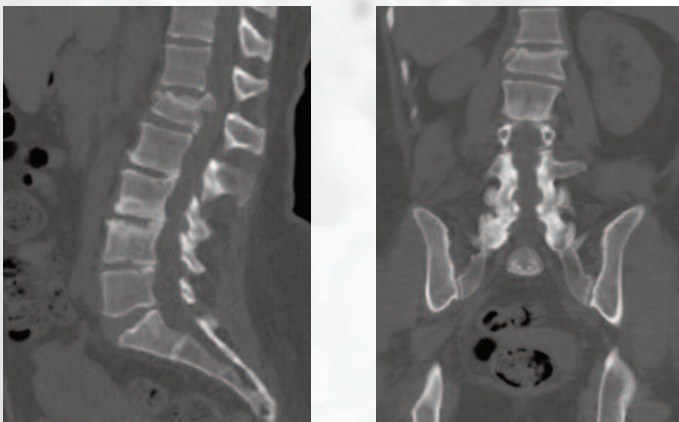
At the age of 54, I woke up to what seemed like just another Sunday, but later would turn out to be anything but “normal”.

On that Sunday, I remember thinking about how much I was enjoying my “second-half” career as a recently licensed marriage and family therapist grateful, for a thriving private practice and the opportunity to help others.

And as a single mom of 2, I was just starting to find the confidence to put my toe in the proverbial online dating pool. In fact, I had recently begun dating a man “of interest”. On this particular Sunday, admittedly I woke up with a sense of excitement about this man as he had phoned me just the day prior and expressing interest in meeting up later Sunday afternoon.

With a heart full of excitement and gratitude, I made plans to go with a long-time friend to our local church with hopes of getting the day off to an even better start. The service was upbeat and I was happy for my decision to go. After the service, I headed home to prepare for the week ahead.

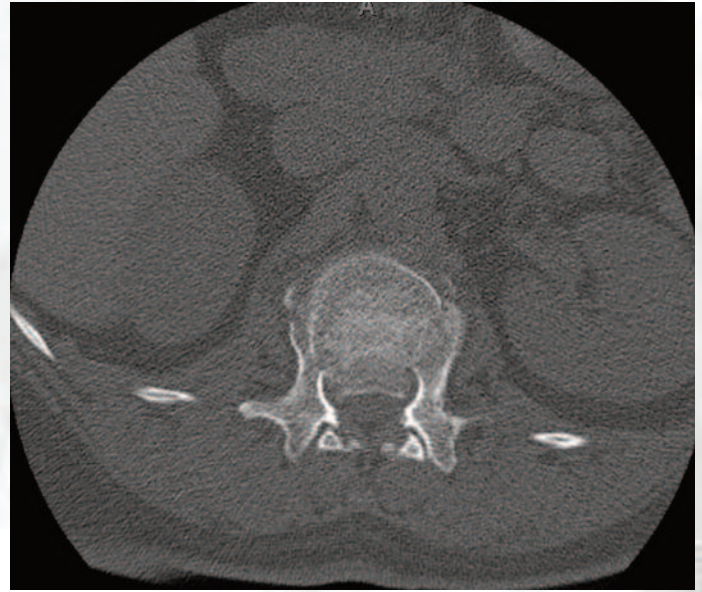
And that’s when my life took a most unexpected turn. It was Sunday, May 3, 2015. I had dropped my friend off and was heading home across a thoroughfare I had traversed at least a million times. And suddenly with no notice at all, my car



*L1 Burst fracture causing neurological weakness and instability of the spinal column (legend for both images)*

was clipped by a van and starting spinning out of control, landing in the outer embankment. The car was crushed like an accordion and me along with it.

The paramedics did what they could to get me out of the car and transport me to a nearby hospital. I know I was in shock because I was certain “I was fine” and that this was all really much ado about nothing.



*Significant fracture of L1 vertebra causing pressure on spinal cord*

How could I have known when I woke up on that beautiful Sunday morning that by noon I would be laying alone in a hospital with a spinal cord injury, my back broken in 3 places and a preliminary diagnosis of paraplegia? It was unbelievable to me.

There I was...a single mom with two children, 30 patient appointments lined up commencing the next day and a mortgage to pay in 13 days.

## HOPE

My next door neighbor was the first to arrive at the hospital. She quickly assessed that I would not be coming home with her that day and not knowing who she should call, she began by dialing people I had most recently called prior to the accident. With that as her guide, can you guess who was first on her list of people to call? The man I had only been out with on a handful of dates! And she reported that from the moment she reached him to the moment he showed up at my bedside - the total time elapsed was 9 minutes!

By then, my family and other loved ones were starting to gather with deep concern as to my prognosis. And with all that going on, I asked everyone to leave the room except for him. And when it was just the two of us, I told him with all

# HOLD ON PAIN ENDS

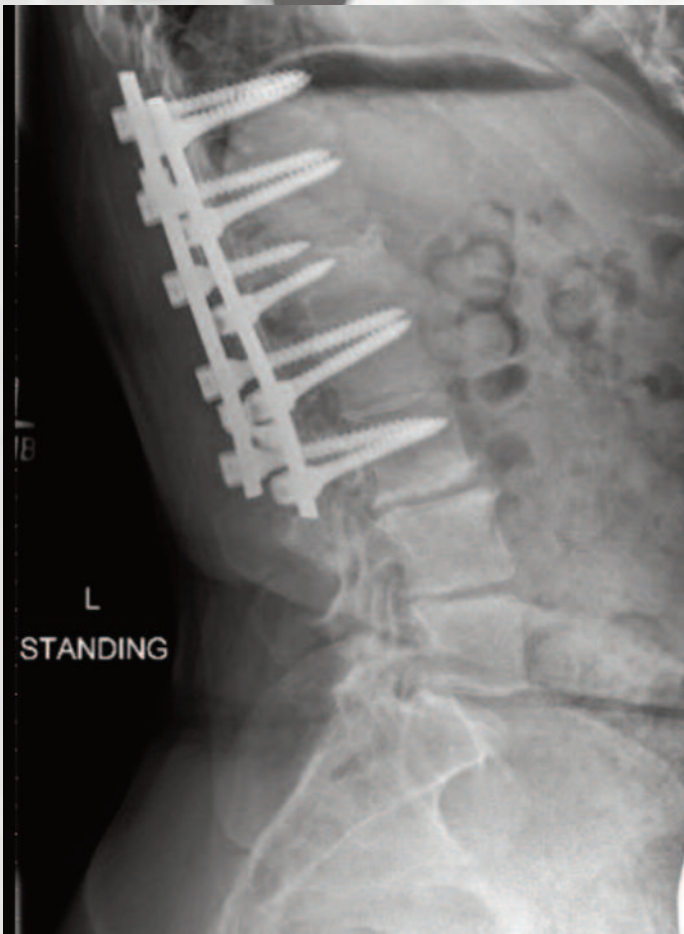


the confidence I could muster “Thanks for coming down, but you need to go. We don’t know what this is. I don’t know where the road goes from here; I don’t know my future. I don’t expect you to stay; please feel free to go.”

And his reply to me? “Who are you to decide for me if I stay or if I go; I’m staying.” And so he did.

By way of a miracle, Dr. Mundis was assigned my case. And with the kindest, most empathetic bedside manner one could possibly hope for, he did his best to explain my injuries, the options available, potential risks and his recommendations.

## COURAGE



Ever the optimist, I was hopeful this was going to be some sort of outpatient procedure whereby I could be back to my work and life by Monday morning. And as crazy as I’m certain that sounds, Dr. Mundis told us how he understood, and how he was going to do everything he could to get me back to my life as soon as possible.

I should probably mention that over the course of time, that guy I had only dated a handful of times named Shawn did stay. And he was there for every part of it. I’m pretty sure Dr. Mundis thought Shawn was my husband.

Surgery was scheduled for May 5, 2015. Dr. Mundis met with us early that day with words of encouragement, hope, and even a willingness to pray with us!

I later learned my spine was outfitted with 2 rods and 10 screws to hold me together.

I stood for the first time the next day with lots of assistance from many kind people.

I was soon transferred to a rehabilitation facility where I re-learned how to sit up, stand, walk, shower, and dress myself.

Practice made perfect and I was released 9 DAYS later, far earlier than projected. I made that mortgage payment and every payment since. And my private practice continues to thrive. And friends that I never even knew I had, came out of the woodwork to help.

*Postoperative x-rays showing realignment and stabilization of a decompressed spinal canal, providing the best chance for neurological improvement.*



Oh! And that guy, Shawn, who stayed with me throughout? Well he proposed to me and we set a date to be married 17 months after the accident. And who better to walk me down the aisle that day? Well, there would be no better person than Dr. Mundis (who graciously agreed). After all, if it weren't for him, plus a lot of answered prayers, I don't think I would've been able to WALK down that aisle. And walk I did with Dr. Mundis accompanying me all the way.

As I write this, we will have been married almost a month and I am the happiest I have ever been. Are their hard days? Yes. Does everything work the way it used to before the accident? Not exactly.

High heels are out of the question. But I can walk my dog. I can garden. I can drive. I can hike. I can snorkel. And I am back to my beautiful, albeit imperfect life, happily married to the man who walked into that hospital and never walked out.

My message?

Never lose your **"H.O.P.E."** no matter the circumstances.

## Hold On, Pain Ends.

Sometimes it's in the darkest times, we grow.

*San Diego Spine Foundation thanks Lori for sharing her words of courage and hope for all those who struggle in their lives, regardless the reason.*

## 2016 Visiting Professor's Annual Meeting

Friday, July 29, 2016

SDSF was honored to have Christopher M. Bono, MD, the 2016 North American Spine Society President, as our esteemed 2016 Visiting Professor.



*Christopher M. Bono, MD, 2016 Visiting Professor.*



*Dr. Bono discusses case with Rady Children's Hospital spine surgeon, Peter O. Newton, MD*



*2016 San Diego Visiting Professorship Faculty present from left: Daniel Green, Peter Newton, Paul Kim, Choll Kim, Hai-Yan Li, R. Todd Albert, Yousef Ghandour, Robert Eastlack, Christopher Bono, Behrooz Akbarnia, Jonathan Roper, Scott Musicant, YuPo Lee, Burt Yazsaz and Gregory Mundis, Jr.*

# FELLOWSHIP

## Graduating Clinical Fellows 2015-2016



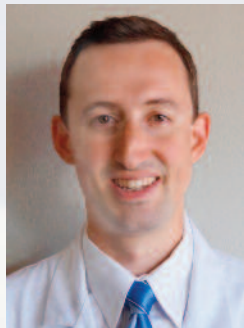
**Rajiv Saigal, MD, PhD**  
Assistant Professor,  
Department of Neurosurgery  
University of Washington; Seattle  
Seattle, WA



**Ravi Srinivas, MD**  
Additional Fellowship  
Foot and Ankle Surgery  
University of California  
Los Angeles, California

## Current Clinical Fellows 2016-2017

*Goal: To gather a wide breadth of experience in all aspects of spine management from the office to the operating room. I particularly chose this fellowship because of the case variety and have not been disappointed thus far. I also look forward to being exposed to some great research minds and honing my acumen for developing and executing quality clinical-based research."*



**Amrit Khalsa, MD**  
Hahnemann University Hospital  
Drexel University College of Medicine,  
Philadelphia, PA



**Justin B. Ledesma, MD**  
Stanford University,  
Stanford, CA

*Goal: "This year I hope to develop my ability to properly plan complex deformity surgeries in addition to becoming proficient at technical aspects of these cases. I also want to learn the techniques of MIS and lateral access surgery and specifically how to apply them in both degenerative and deformity situations. In addition to developing my skills as a surgeon, I hope, through a comprehensive exposure to spinal disorders, that I will also become a more adept clinician in both diagnosis and treatment."*

## Future Clinical Fellows 2017-2018



**Nick Ghazarian, DO**  
Valley Hospital Medical Center  
Las Vegas, Nevada



**Randall Hlubek, MD**  
Barrows Neurological Institute  
Phoenix, Arizona



**Eric Varley, DO**  
Michigan State University,  
Metro Health  
Grand Rapids, Michigan



**Jeff Pawelek, BS**  
Research Director



**Stacie Nguyen, MPH**  
Manager: Clinical &  
Fellowship Research



**Pooria Hosseini, MD, MSc.**  
Research Fellow

## Publications and Presentations 2015-16

### Books Edited

**Akbarnia BA**, Yazici M, Thompson GH - Editors: The Growing Spine: Management of Spinal Disorders in Young Children. Springer Publishing, 2016

**Kostial P**: Assistant to the Editors: The Growing Spine: Management of Spinal Disorders in Young Children. Springer-Verlag, Berlin Heidelberg, 2016

### Book Chapters

Schwend RM, **Akbarnia BA**, Schmidt J, Blakemore LC, Reigut JL: What Can We Learn About Ribs and Vertebral Growth from an Osteological Collection? The Growing Spine: Management of Spinal Disorders in Young Children. Springer-Verlag, Berlin Heidelberg, 2016

Elsebaie HB, **Pawelek J**: Clinical Examination and Associated Comorbidities of Early Onset Scoliosis. The Growing Spine: Management of Spinal Disorders in Young Children. Springer-Verlag, Berlin Heidelberg, 2016

**Mundis GM**, Blakemore LC, **Akbarnia BA**: Idiopathic Early Onset Scoliosis. The Growing Spine: Management of Spinal Disorders in Young Children. Springer-Verlag, Berlin Heidelberg, 2016

Thompson GH, **Akbarnia BA**: Single and Dual Traditional Growing Rods. The Growing Spine: Management of Spinal Disorders in Young Children. Springer-Verlag, Berlin Heidelberg, 2016

**Akbarnia BA**, **Arandi N**: Magnetically Controlled Growing Rods (MCGR). The Growing Spine: Management of Spinal Disorders in Young Children. Springer-Verlag, Berlin Heidelberg, 2016

Emans JB, **Akbarnia BA**: Complications Following Distraction-Based Growth-Friendly Surgery in Early-Onset Scoliosis. The Growing Spine: Management of Spinal Disorders in Young Children. Springer-Verlag, Berlin Heidelberg, 2016

Poe-Kochert C, D'Ambra P, **Kostial P**: Nursing Care. The Growing Spine: Management of Spinal Disorders in Young Children. Springer-Verlag, Berlin Heidelberg, 2016

Yazici M, **Akbarnia BA**, Thompson GH: A Journey from the Past to the Future. The Growing Spine: Management of Spinal Disorders in Young Children. Springer-Verlag, Berlin Heidelberg, 2016

**Goldstein MJ**, **Akbarnia BA**: Dual Growing Rod Treatment: Early Onset Scoliosis, A Comprehensive Guide from Oxford Meetings, Nnadi D, Editor, Thieme Publishers Stuttgart, 2016

**Kabirian N**, **Akbarnia BA**: Complications of Growing Rod Treatment. A Comprehensive Guide from Oxford Meetings, Nnadi D, Editor, Thieme Publishers Stuttgart, 2016

### Peer-Reviewed Publications: Adult

Park P, Mummaneni PV, La Marca F, Fu KG, **Nguyen S**, Wang MY, Uribe JS, Anand N, **Mundis GM**, Deviren V, Kanter AS, Fessler RG, Shaffrey CI, **Akbarnia BA**, Passias PG, Nunley PD, Chou D, **Eastlack RK**, Okonkwo DO: What Is the Impact of Obesity in MIS Vs Open Surgery for Adult Spinal Deformity? Neurosurgery August 2015, Suppl 1, Clinical Neurosurgery: 221.

**Mundis GM**, Uribe JS, Mummaneni PV, Anand N, Park P, Okonkwo DO, Kanter Ad, Fessler RG, **Nguyen S**, **Akbarnia BA**, Bess S, Wang MY, La Marca F, Than KD, Deviren V, Chou D, Lafage V, Schwab F, Shaffrey CI: A Critical Analysis of Sagittal Plane Deformity Correction with Minimally Invasive Surgery: A 2-Year Follow-Up Study of Deformity Patients Categorized by the SRS-Schwab Classification. Neurosurgery August 2015, Suppl 1, Clinical Neurosurgery: 222-223.

Passias PG, Soroceanu A, Scheer J, Yang S, Boniello A, Smith JS5, Protosaltis T, Kim HJ, Schwab F, Gupta M, Klineberg E, **Mundis GM**, Lafage R, Hart R, Shaffrey C, Lafage V, Ames C, ISSG: Magnitude of Preoperative Cervical Lordotic Compensation and C2-T3 Angle Are Correlated to Increased Risk of Postoperative Sagittal Spinal Pelvic Malalignment in Adult Thoracolumbar Deformity Patients at 2-Year Follow-Up. Spine J, 15(8):1756-63, August 2015.

Protosaltis TS, Scheer JK, Terran JS, Smith JS, Hamilton DK, Kim HJ, **Mundis GM**, Hart RA, McCarthy IM, Klineberg E, Lafage V, Bess S, Schwab F, Shaffrey CI, Ames CP, ISSG: How The Neck Affects the Back: Changes in Regional Cervical Sagittal Alignment Correlate to HRQOL Improvement in Adult Thoracolumbar Deformity Patients at 2-Year Follow-Up. J Neurosurg Spine, 23(2):153-8, August 2015



Oh T, Scheer JK, **Eastlack RK**, Smith JS, Lafage V, Protosaltis TS, Klineberg E, Passias PG, Deviren V, Hostin R, Gupta M, Bess S, Schwab F, Shaffrey CI, Ames CP, ISSG: Cervical compensatory alignment changes following correction of adult thoracic deformity: a multicenter experience in 57 patients with a 2-year follow-up, J Neurosurg: Spine, 22(6):658-65, August 2015

Soroceanu A, Diebo BG, Burton D, Smith JS, Deviren V, Shaffrey C, Kim HJ, **Mundis G**, Ames C, Errico T, Bess S, Hostin R, Hart R, Schwab F, Lafage V, ISSG: Radiographical and Implant-Related Complications in Adult Spinal Deformity Surgery: Incidence, Patient Risk Factors, and Impact on Health-Related Quality of Life. Spine (Phila PA 1976), 40(18):1414-21, September 2015

Sciubba DM, Scheer JK, Smith JS, Lafage V, Klineberg E, Gupta M, **Mundis GM**, Protosaltis TS, Kim HJ, Hiratzka JR, Koski T, Shaffrey CI, Bess S, Hart RA, Ames CP, ISSG: Which Daily Functions Are Most Affected by Stiffness Following Total Lumbar Fusion: Comparison of Upper Thoracic and Thoracolumbar Proximal Endpoints. *Spine (Phila Pa 1976)*, 40(17):1338-44, September 2015

Smith JS, Shaffrey CI, Lafage V, Schwab F, Scheer JK, Protosaltis T, Klineberg E, Gupta M, Hostin R, Fu KM, **Mundis GM Jr**, Kim HJ, Deviren V, Soroceanu A, Hart RA, Burton DC, Bess S, Ames CP, ISSG: Comparison of Best Versus Worst Clinical Outcomes for Adult Spinal Deformity Surgery: A Retrospective Review of a Prospectively Collected, Multicenter Database with 2-Year Follow-Up. *J Neurosurg Spine*, 23(3):349-59, September 2015

Fakurnejad S, Scheer JK, Lafage V, Smith JS, Deviren V, Hostin R, **Mundis GM**, Burton DC, Klineberg E, Gupta M, Kebaish K, Shaffrey CI, Bess S, Schwab F, Ames CP, ISSG: The Likelihood of Reaching Minimum Clinically Important Difference and Substantial Clinical Benefit at 2 Years Following a 3-Column Osteotomy: Analysis of 140 Patients. *J Neurosurg Spine*, 23(3):340-8, September 2015

Scheer JK, **Mundis GM**, Klineberg E, Hart RA, Deviren V, **Nguyen S**, Protosaltis TS, Gupta M, Bess S, Shaffrey CI, Schwab F, Lafage V, Smith JS, Ames CP, ISSG: Postoperative Recovery After Adult Spinal Deformity Surgery: Comparative Analysis of Age in 149 Patients During 2-Year Follow-Up. *Spine (Phila Pa 1976)*, 40(19):1505-15, October 2015

**Turner JD**, Walker CT, **Mundis GM Jr**, Kakarla UK: Health Burden of Adult Spinal Deformity Compared with Other Chronic Diseases, *World Neurosurg*, 84(4):876-7, October 2015

**Mundis GM**, **Eastlack RK**, **Moazzaz P**, Turner AW, Cornwall GB, Contribution of Round vs. Rectangular Expandable Cage Endcaps to Spinal Stability in a Cadaveric Corpectomy Model. *Int J Spine Surg*, 22;9:53, October 2015

Daniels AH, Smith JS, Hiratzka J, Ames CP, Bess S, Shaffrey CI, Schwab FJ, Lafage V, Klineberg EO, Burton D, **Mundis GM**, Line B, Hart RA, ISSG: Functional Limitations Due to Lumbar Stiffness in Adults With and Without Spinal Deformity. *Spine (Phila Pa 1976)*, 40(20):1599-604, October 2015



*Clinical Fellow Rajiv Saigal presents research at 2016 IMAST Annual Meeting*

Liu S, Diebo B, Henry JK, Smith JS, Hostin R, Cunningham ME, **Mundis GM**, Ames CP, Burton D, Bess S, **Akbarnia BA**, Hart RA, Passias PG, Schwab FJ, Lafage V: The Benefit of Non-Operative Treatment for Adult Spinal Deformity: Identifying Predictors for Reaching a Minimal Clinically Important Difference. *The Spine Journal – Published Online*: Vol. 16, Issue 2 Pps 210-218, October 2015

Smith JS, Ramchandran S, Lafage V, Shaffrey CI, Ailon T, Klineberg E, Protosaltis T, Schwab FJ, O'Brien M, Hostin R, Gupta M, **Mundis GM**, Hart R, Kim HJ, Passias P, Scheer JK, Deviren V, Burton DC, **Eastlack RK**, Bess S, Albert TJ, Riew KD, Ames CP, ISSG: Prospective Multicenter Assessment of Early Complication Rates Associated with Adult Cervical Deformity Surgery in 78 Patients, *Neurosurgery*, [Epub ahead of print], November 2015

Smith JS, Lafage V, Shaffrey CI, Schwab F, Lafage R, Hostin R, O'Brien M, Boachie-Adjei O, **Akbarnia BA**, **Mundis GM**, Kelly MP, Zebala L, Line B, Klineberg E, Gupta M, Deviren V, Hart R, Burton D, Bess S, Ames CP: Outcomes of Operative and Nonoperative Treatment for Adult Spinal Deformity. In Press. *Neurosurgery*. November 2015

Smith JS, Lafage V, Shaffrey CI, Schwab F, Lafage R, Hostin R, O'Brien M, Boachie-Adjei O, **Akbarnia BA**, **Mundis GM**, Errico T, Kim HJ, Protosaltis TS, Hamilton DK, Scheer JK, Sciubba D, Ailon T, Fu KG, Kelly MP, Zebala L, Line B, Klineberg E, Gupta M, Deviren V, Hart R, Burton D, Bess S, Ames CP, ISSG: Outcomes of Operative and Nonoperative Treatment for Adult Spinal Deformity: A Prospective, Multicenter, Propensity-Matched Cohort Assessment with Minimum 2-Year Follow-up. *Neurosurgery*, [Epub ahead of print], November 2015

Buckland AJ, Vigdorichik J, Schwab FJ, Errico TJ, Lafage R, Ames C, Bess S, Smith J, **Mundis GM**, Lafage V: Acetabular Anteversion Changes Due to Spinal Deformity Correction: Bridging the Gap Between Hip and Spine Surgeons. *J Bone Joint Surg Am*, 97(23):1913-20, December 2015

Ames CP, Smith JS, **Eastlack RK**, **Blaskiewicz DJ**, Shaffrey CI, Schwab F, Bess S, Kim HJ, **Mundis GM**, Klineberg E, Gupta M, O'Brien M, Hostin R, Scheer JK, Protosaltis TS, Fu KM, Hart R, Albert TJ, Riew KD, Fehlings MG, Deviren V, Lafage V, ISSG: Reliability Assessment of a Novel Cervical Spine Deformity Classification System. *J Neurosurg Spine*, 23(6):673-83, December 2015

Klineberg EO, Passias PG, Jalai CM, Worley N, Sciubba DM, Burton DC, Gupta MC, Soroceanu A, Zebala LP, **Mundis GM**, Kim HJ, Hamilton DK, Hart RA, Ames CP, Lafage V, ISSG: Predicting Extended Length of Hospital Stay in an Adult Spinal Deformity Surgical Population. *Spine (Phila Pa 1976)*, [Epub ahead of print], December 2015

Kelly MP, Zebala LP, Kim HJ, Sciubba DM, Smith JS, Shaffrey CI, Bess S, Klineberg E, **Mundis GM**, Burton D, Hart R, Soroceanu A, Schwab F, Lafage V, ISSG: Effectiveness of Preoperative Autologous Blood Donation for Protection Against Allogeneic Blood Exposure in Adult Spinal Deformity Surgeries: A Propensity-Matched Cohort Analysis. *J Neurosurg Spine*, 24(1):124-30, January 2016

Mummaneni PV, 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**, Shaffrey CI, ISSG: Does Minimally Invasive Percutaneous Posterior Instrumentation Reduce Risk of Proximal Junctional Kyphosis in Adult Spinal Deformity Surgery? A Propensity-Matched Cohort Analysis. *Neurosurgery*, 78(1):101-8, January 2016

Scheer JK, Passias PG, Soroceanu AM, Boniello AJ, **Mundis GM**, Klineberg E, Kim HJ, Protosaltis TS, Gupta M, Bess S, Shaffrey CI, Schwab F, Lafage V, Smith JS, Ames CP, ISSG: Association Between Preoperative Cervical Sagittal Deformity and Inferior Outcomes at 2-Year Follow-Up in Patients with Adult Thoracolumbar Deformity: Analysis of 182 Patients. *J Neurosurg Spine*, 24(1):108-15, January 2016

**Turner JD**, **Eastlack RK**, Mirzadeh Z, **Nguyen S**, **Pawelek J**, **Mundis GM Jr**, Fluctuations in Spinal Cord Perfusion During Adult Spinal Deformity Correction Identify Neurologic Changes: Proof of Concept. *World Neurosurg*, 85:365.e1-6, January 2016

Gupta M, Henry JK, Schwab F, Klineberg E, Smith JS, Gum J, Jr DW, Liabaud B, Diebo BG, Hamilton DK, **Eastlack RK**, Passias PG, Burton D, Protosaltis T, Lafage V, ISSG: Dedicated Spine Measurement Software (SMS) Quantifies Key Spino-Pelvic Parameters More Reliably Than Traditional PACS Tools, Spine (Phila Pa 1976), 41(1):E22-7, January 2016

**Nourian AA**, Cunningham C, **Bagheri A**, **Bruffey JD**, **Eastlack RK**, Effect of Anatomic Variability and Level of Approach on Perioperative Vascular Complications with Anterior Lumbar Interbody Fusion, Spine (Phila Pa 1976), 41(2):E73-77, January 2016.

Bess S, Line B, Fu KM, McCarthy I, Lafage V, Schwab F, Shaffrey C, Ames C, **Akbarnia BA**, Kim HJ, Kelly M, Burton D, Hart R, Klineberg E, Kebaish K, Hostin R, **Mundis GM**, Mummaneni P, Smith JS, ISSG: The Health Impact of Symptomatic Adult Spinal Deformity: Comparison of Deformity Types to United States Population Norms and Chronic Diseases. Spine, Vol. 41, Number 3, Pp 224-233, February 2016

Park P, Okonkwo DO, **Nguyen S**, **Mundis GM**, 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, ISSG: Can a Minimal Clinically Important Difference Be Achieved in Elderly Patients with Adult Spinal Deformity Who Undergo Minimally Invasive Spinal Surgery? World Neurosurg, 86:168-72, February 2016

Hamilton DK, Kanter AS, Bollinger BD, **Mundis GM**, **Nguyen S**, Mummaneni PV, Anand N, Fessler RG, Passias PG, Park P, La Marca F, Uribe JS, Wang MY, **Akbarnia BA**, Shaffrey CI, Okonkwo DO, ISSG: Reoperation Rates in Minimally Invasive, Hybrid and Open Surgical Treatment for Adult Spinal Deformity with Minimum 2-Year Follow-Up, Eur Spine J. [Epub ahead of print], February 2016

Smith JS, Klineberg E, Lafage V, Shaffrey CI, Schwab F, Lafage R, Hostin R, **Mundis GM**, Errico TJ, Kim HJ, Protosaltis TS, Hamilton DK, Scheer JK, Soroceanu A, Kelly MP, Line B, Gupta M, Deviren V, Hart R, Burton DC, Bess S, Ames CP, ISSG: Prospective Multicenter Assessment of Perioperative and Minimum 2-Year Postoperative Complication Rates Associated with Adult Spinal Deformity Surgery. J Neurosurg Spine, [Epub ahead of print], February 2016

Park P, Wang MY, **Nguyen S**, **Mundis GM**, La Marca F, Uribe JS, Anand N, Okonkwo DO, Kanter AS, Fessler R, **Eastlack RK**, Chou D, Deviren V, Nunley PD, Shaffrey CI, Mummaneni PV, ISSG: Comparison of Complications and Clinical and Radiographic Outcomes Between Nonobese and Obese Patients with Adult Spinal Deformity Undergoing Minimally Invasive Surgery. World Neurosurg, 87:55-60, March 2016

Smith JS, Klineberg E, Shaffrey CI, Lafage V, Schwab FJ, Protosaltis T, Scheer JK, Ailon T, Ramachandran S, Daniels A, **Mundis GM**, Gupta M, Hostin R, Deviren V, **Eastlack RK**, Passias P, Hamilton DK, Hart R, Burton DC, Bess S, Ames CP, ISSG: Assessment of Surgical Treatment Strategies for Moderate to Severe Cervical Spinal Deformity Reveals Marked Variation in Approaches, Osteotomies and Fusion Levels. World Neurosurg, [Epub ahead of print], April 2016

Soroceanu A, Burton DC, Oren JH, Smith JS, Hostin R, Shaffrey CI, **Akbarnia BA**, Ames CP, Errico TJ, Bess S, Gupta MC, Deviren V, Schwab FJ, Lafage V, ISSG: Medical Complications After Adult Spinal Deformity Surgery: Incidence, Risk Factors and Clinical Impact. Spine: [Epub Ahead of Print]. April 19, 2016

Phillips FM, Cheng I, Rampersaud YR, **Akbarnia BA**, Pimenta L, Rodgers WB, Uribe JS, Khanna N, Smith WD, Youssef JA, Sulaiman W, Tohmeh A, Cannestra A, Wohns R, Okonkwo DO, Acosta F, Rodgers EJ, Anderson G: Breaking Through The "Glass Ceiling" Of Minimally Invasive Spine Surgery. Spine Vol. 41, No. 8s, Pps S39-S43, April 2016



*SDSF at 2016 SOLAS: Stacie Nguyen (Research Manager), Edward Nomoto (Past Clinical Fellow), Robert Eastlack, Paul Stanton (Past Clinical Fellow), Gregory Mundis, Jr., Behrooz Akbarnia, Bruce van Dam (Retired Faculty Member), Ricardo Acacio (Past Int. Visiting Fellow), Enrique Vargas (Past Int. Visiting Fellow) and Pooria Hosseini (Research Fellow)*

**Saigal R**, **Mundis GM**, **Eastlack RK**, Uribe J, Phillips F, **Akbarnia BA**: Anterior Column Realignment (ACR) in Adult Sagittal Deformity Correction: Technique and Review of the Literature. Spine Vol. 41, No. 8s, Pps S66-S73. April 2016

Smith JS, Lafage V, Schwab F, Lafage R, Hostin R, O'Brien M, Boachie-Adjei O, **Akbarnia BA**, **Mundis GM**, Errico T, Kim HJ, Protosaltis TS, Hamilton DK, Scheer JK, Sciubba D, Ailon, Fu KM, Kelly MP, Zebala K, Line B, Klineberg E, Gupta M, Deviren V, Hart R, Burton D, Bess S, Ames CP, ISSG: Outcomes of Operative and Nonoperative Treatment for Adult Spinal Deformity: A Prospective, Multicenter Propensity-Matched Cohort Assessment with Minimum 2-Year Follow-Up. Neurosurgery 2016 Jun;78(6):851-61

**Hosseini P**, **Mundis GM**, **Eastlack RK**, **Nourian A**, **Pawelek J**, **Nguyen S**, **Akbarnia BA**: Do Longer Surgical Procedures Result in Greater Contamination of Surgeons' Hands? Clin Orthop Relat Res, 474(7):1707-1713, July 2016

Than KD, Park P, Fu Km, **Nguyen S**, Wang My, Chou D, Nunley PD, Anand N, Fessler RG, Shaffrey Ci, Bess S, **Akbarnia BA**, Deviren V, Uribe JS, La Marca F, Kanter AS, Okonkwo DO, **Mundis GM**, Mummaneni PV; ISSG: Clinical and Radiographic Parameters Associated with Best Versus Worst Clinical Outcomes in Minimally Invasive Spinal Deformity Surgery. J Neurosurg Spine. 2016 Jul;25(1): 21-5

**Hosseini P**, **Mundis GM**, **Eastlack RK**, **Pawelek J**, **Nguyen S**, **Akbarnia BA**: Is There a Role for an Ultrasonic Bone-Cutting Device in Adult Spinal Deformity: A Safety and Reproducibility Study. Shafa Ortho J. In Press (In Press): E7461. July 26, 2016

## Peer-Reviewed Publications: Pediatric

Schwend RM, Schmidt JA, Reigrut JL, Blakemore LC, **Akbarnia BA**: Letter to The Editor Concerning: "Patterns of Rib Growth in The Human Child". Spine Deformity Journal, Vol. 3, Issue 6, Pps 608-610 And Pps 610-611. November 2015

Cheung JPY, Cahill P, Yaszay B, **Akbarnia BA**, Cheung KMC: Update On the Magnetically Controlled Growing Rod: Tips and Pitfalls, Journal of Orthopaedic Surgery, Vol. 23(3):383-90 December 2015

**Mundis GM**, **Pawelek J**, **Nomoto, EK**, **Hennessy MW**, Yaszay B, **Akbarnia BA**: Longitudinal Pilot Analysis of Radiation Exposure During the Course of Growing Rod Treatment for Early-Onset Scoliosis. Spine Deformity Journal Vol.4, Pp 55-58, January 2016

**Pawelek JB**, Yaszay B, **Nguyen S**, Newton PO, **Mundis GM**, **Akbarnia BA**, HSG, GSSG: Case-Matched Comparison of Spinal Fusion Versus Growing Rods for Progressive Idiopathic Scoliosis in Skeletally Immature Patients. Spine, Vol. 41, Number 3, Pp 234-238, February 2016

**Goldstein MJ, Kabirian N, Pawelek JB, Arandi NR, Mundis GM, Yaszay B, Newton PO, Akbarnia BA:** Quantifying Anesthesia Exposure in Growing Rod Treatment for Early Onset Scoliosis. *J Pediatr Orthop.* [Epub Ahead of Print] Feb 15, 2016

**Hosseini P, Pawelek J, Mundis GM, Yaszay B, Ferguson J, Helenius I, Cheung K, Demirkiran G, Alanay A, Senkoylu A, Elsebaie H, Akbarnia BA:** Magnetically-Controlled Growing Rods for Early Onset Scoliosis: A Multicenter Study of 23 Cases with Minimum 2 Years Follow-Up. *Spine (Phila Pa 1976).* [Epub Ahead of Print] Mar 10, 2016

**Hosseini P, Nnadi C, Rehak L, Repko M, Grevitt M, Aydinli U, Allen C, Pawelek J, Crandall D, Akbarnia BA:** Analysis of Segmental Mobility Following a Novel Posterior Apical Short-Segment Correction for Adolescent Idiopathic Scoliosis. *Spine (Phila Pa 1976).* [Epub Ahead of Print] April 5, 2016

Blakemore L, Schwend R, **Akbarnia BA, Dumas M, Schmidt J:** Growth Patterns of the Neurocentral Synchondrosis (NCS) In Immature Cadaveric Vertebra. *J Pediatr Orthop.* [Epub Ahead of Print]. April 30, 2016

Brooks, JT, Jain A, Perez-Gruoso FS, Skaggs DI, Thompson GH, **Akbarnia BA, Sponseller PD, GSSG:** Outcomes of Pelvic Fixation in Growing Rod Constructs: An Analysis of Patients with A Minimum of 4 Years of Follow-Up. *Spine Deformity Journal. Vol. 4, Issue 3, Pps 211-216.* May 2016

Keskinen H, Helenius I, Nnadi C, Ferguson J, **Mundis GM, Pawelek J, Akbarnia BA:** Preliminary Comparison of Primary and Conversion Surgery with Magnetically Controlled Growing Rods in Children with Early Onset Scoliosis. *Eur Spine J* [Epub Ahead of Print] May 9, 2016

Matsumoto H, Williams B, Park HY, Yoshimachi JY, Roye BD, Roye DP Jr, **Akbarnia BA, Emans J, Skaggs D, Smith JT, Vitale MG:** The Final 24-Item Early Onset Scoliosis Questionnaires (EOSQ-24): Validity, Reliability and Responsiveness. *J Pediatr Orthop.* [Epub Ahead of Print] Jun 13, 2016

**Choi E, Yaszay B, Mundis GM, Hosseini P, Pawelek J, Alanay A, Berk H, Cheung K, Demirkiran G, Ferguson J, Gregg T, Helenius I, La Rosa G, Senkoylu A, Akbarnia BA.** Implant Complications After Magnetically Controlled Growing Rods for Early Onset Scoliosis: A Multicenter Retrospective Review. *J Pediatr Orthop.* [Epub Ahead of Print] Jun 18, 2016

Jain A, Sponseller PD, Flynn JM, Shah SA, Thompson GH, Emans JB, **Pawelek JB, Akbarnia BA, GSSG:** Avoidance of "Final" Fusion After Growing-Rod Treatment for Early Onset Scoliosis. *J Bone Joint Surg Am.* 2016, Jul 6; 98(13): 1073-8

Hamilton DK, Carlson BB, Klineberg EO, Bess S, Hart RA, Burton DC, Keefe MK, Scheer JK, Ames CP, Smith JS, Passias PG, Protopsaltis TS, Soroceanu A, Sciubba DM, Kim HJ, Lafage V, **Mundis GM, Schwab FJ, ISSG:** Patients Incurring Multiple Complications following Adult Spinal Deformity (ASD) Surgery Demonstrate an Additive Effect Resulting in Incremental Worsening of Health Related Quality of Life (HRQOL). 30<sup>th</sup> Annual Meeting of the North American Spine Society, Chicago, IL, October 14-17, 2015 **POSTER**

Klineberg EO, Iyer S, Kelly MP, Matthew E, Cunningham, MD, Zebala LP, Brian J, Neuman BJ, Hart RA, Daniels A, Bess S, Gupta MC, Hamilton DK, **Mundis GM, Lafage V, Smith JS, Ames CP, Burton DC, Kim HJ, ISSG:** Dural Tears Do Not Affect Outcomes or Rates of Other Associated Complications in Adult Spinal Deformity Surgery. 30<sup>th</sup> Annual Meeting of the North American Spine Society, Chicago, IL, October 14-17, 2015 **POSTER**

Harris JE, **Blaskiewicz DJ, Han PP, Turner AW, Mundis GM:** An In Vitro Evaluation of Sagittal Alignment in the Cervical Spine after Insertion of Supraphysiologic Lordotic Implants. 30<sup>th</sup> Annual Meeting of the North American Spine Society, Chicago, IL, October 14-17, 2015 **POSTER**

Than KD, Park P, **Nguyen S, Wang MY, Chou D, Nunley PD, Anand N, Fessler RG, Shaffrey CI, Bess S, Diebo BG, Deviren V, Uribe JS, Kanter AS, Okonkwo DO, Mundis GM, ISSG:** Clinical and Radiographic Parameters Associated with Best versus Worst Clinical Outcomes in Minimally Invasive Deformity Surgery. 30<sup>th</sup> Annual Meeting of the North American Spine Society, Chicago, IL, October 14-17, 2015 **POSTER**

Smith JS, Lafage V, Shaffrey CI, Protopsaltis TS, Passias PG, Schwab FJ, Gupta MC, O'Brien MJ, Hostin RA, **Mundis GM, Eastlack RK, Burton DC, Hart RA, Daniels A, Kim HJ, Klineberg EO Bess S, Deviren V, Albert TJ, K. Riew D, Ames CP, ISSG:** Prospective Multicenter Assessment of Early Complication Rates Associated with Adult Cervical Deformity Surgery in 78 Patients. 30<sup>th</sup> Annual Meeting of the North American Spine Society, Chicago, IL, October 14-17, 2015 **POSTER**

Kim HJ, Iyer S, Ames CP, Cunningham ME, Klineberg EO, Protopsaltis TS, Kelly MP, **Mundis GM, Bess S, Burton DC, Schwab FJ, Hart RA, Lafage R, Lafage V, ISSG:** Pelvic Tilt May Not Improve Despite Spinopelvic Realignment: An Analysis of Causative Factors. 30<sup>th</sup> Annual Meeting of the North American Spine Society, Chicago, IL, October 14-17, 2015 **POSTER**

Henry J, Schwab FJ, Kelly MP, **Mundis GM, Bess RS, Lafage V, ISSG:** The Unpredictability of Primary Adult Spinal Deformity Patients Undergoing Sagittal Realignment. American Academy of Orthopaedic Surgeons 2016 Annual Meeting, Orlando, Florida, March 1-5, 2016 **POSTER**

## Poster Exhibits - Pediatric

Yaszay B, Reighard FG, Farnsworth C, Doan J, **Pawelek J, Mundis GM, Akbarnia BA:** Analyzing Early Onset Scoliosis in 3d: How Does Growing Rod Surgery Affect the Three Planes of Deformity? 9<sup>th</sup> International Congress On Early Onset Scoliosis. Boston, Massachusetts, November 19-20, 2015 **POSTER**

Matsumoto H, Feinberg N, Yoshimachi J, Roye DP, **Akbarnia BA, Garg S, Sanders JO, Skaggs DL, Smith JT, Vitale MG, CSSG, GSSG:** Short Term Health Related Quality of Life and Family Burden After Surgical or Casting Treatment for Early Onset Scoliosis. 9<sup>th</sup> International Congress On Early Onset Scoliosis. Boston, Massachusetts, November 19-20, 2015 **POSTER**

Helenius I, Keskinen H, Nnadi C, Cheung KMC, Ferguson J, **Mundis GM, Pawelek J, Akbarnia BA:** Comparison of Primary and Conversion Surgery with Magnetically Controlled Growing Rods in Children with Early Onset Scoliosis. 9<sup>th</sup> International Congress

# POSTER

## Poster Exhibits – Adult

Uribe JS, Mummaneni PV, Okonkwo DO, Nunley PD, **Eastlack RK, Park P, Akbarnia BA, Shaffrey CI, Deviren V, Nguyen S, Anand N, Kanter A, Fessler RG, Mundis GM, ISSG:** Does MIS Surgery Allow for Shorter Constructs in The Surgical Treatment of ASD? Scoliosis Research Society Annual Meeting, Minneapolis, Minnesota, September 30-October 3, 2015 **POSTER**



On Early Onset Scoliosis. Boston, Massachusetts, November 19-20, 2015 **POSTER**

**Hosseini P, Pawelek J, Nguyen S**, Thompson GH, Shah S, Flynn JM, Dormans JP, **Akbarnia BA**, GSSG: Rod Fracture and Lengthening Intervals in Traditional Growing Rods: Is There a Relationship? 9<sup>th</sup> International Congress On Early Onset Scoliosis. Boston, Massachusetts, November 19-20, 2015 **POSTER**

**Hosseini P, Pawelek J, Mundis GM**, Yazsay B, Ferguson J, Helenius I, Cheung KMC, Demirkiran G, Alanay A, Senkoylu A, Elsebaie H, **Akbarnia BA**: Magnetically-Controlled Growing Rods for Early Onset Scoliosis: A Multicenter Study of 23 Cases with Minimum of 2 Years Follow-Up. 9<sup>th</sup> International Congress On Early Onset Scoliosis. Boston, Massachusetts, November 19-20, 2015 **POSTER**

Yaszay B, **Pawelek J**, Emans JB, Cahill P, Robertson B, **Mundis GM**, **Akbarnia BA**, CSSG, GSSG: The Utility of Growth-Friendly Surgery in Early Onset Scoliosis Secondary to Beals Syndrome. 9<sup>th</sup> International Congress On Early Onset Scoliosis. Boston, Massachusetts, November 19-20, 2015 **POSTER**

**Choi E, Hosseini P, Mundis GM, Pawelek J, Akbarnia BA**, Helenius IJ, Ferguson JA, Cheung KMC, Yazsay B: Implant Complications After Magnetic-Controlled Growing Rods for Early Onset Scoliosis. American Academy of Orthopaedic Surgeons 2016 Annual Meeting. Orlando, Florida, March 1-5, 2016 **POSTER**

Polly DW, Ackerman SJ, Schneider KB, **Pawelek J, Akbarnia BA**: Cost Analysis of Magnetically-Controlled Growing Rods Compared with Traditional Growing Rods for Early Onset Scoliosis in The United States: An Integrated Healthcare Delivery System. 2016 Pediatric Orthopaedic Annual Meeting. Indianapolis, Indiana. April 27-30, 2016 **E-POSTER**

Sponseller PD, **McClung A, Pawelek J**, El-Hawary R, Thompson GH, Smith JT, Vitale MG, **Akbarnia BA**, Bachabi M, CSSG, GSSG, Johns Hopkins Medicine: Growing Rod and Vertical Expandable Prosthetic Titanium Rib Perform Differently for Idiopathic Early Onset Scoliosis at 5 Year Follow-Up. 2016 Pediatric Orthopaedic Annual Meeting. Indianapolis, Indiana. April 27-30, 2016 **POSTER**

**Hosseini P, Pawelek J, Mundis GM**, Yazsay B, Ferguson J, Helenius I, Cheung KMC, Alanay A, Senkoylu A, Elsebaie H, **Akbarnia BA**: Magnetically-Controlled Growing Rods for Early Onset Scoliosis: A Multicenter Study of 23 Cases with Minimum of 2 Years Follow-Up. 2016 Pediatric Orthopaedic Annual Meeting. Indianapolis, Indiana. April 27-30, 2016 **POSTER**

## Podium Presentations – Adult

Klineberg EO, Smith JS, Lafage V, Shaffrey CI, Bess S, Schwab FJ, Gupta MC, Hart RA, Protosaltis TS, **Mundis GM**, Kim HJ, Burton DC, Scheer JK, Ames CP, ISSG: Prospective Multicenter Assessment of Perioperative and Minimum Two-Year Postoperative Complication Rates Associated with Adult Spinal Deformity Surgery. 50<sup>th</sup> Annual Meeting of the Scoliosis Research Society, Minneapolis, Minnesota. September 30-October 3, 2015



Scheer JK, Gum JL, Kelly MP, Schwab FJ, Hostin R, Lafage V, Bess S, Protosaltis TS, Burton DC, Gupta MC, Hart RA, **Mundis GM**, Smith JS, Ames CP, ISSG: Ratio of Disability to Deformity Burden in 264 Adult Spinal Deformity Patients with 2-Year Follow-Up: Novel Insight into Drivers of Disability. 50<sup>th</sup> Annual Meeting of the Scoliosis Research Society, Minneapolis, Minnesota. September 30-October 3, 2015



Gupta MC, Henry JK, Lafage V, Schwab FJ, Ames CP, Klineberg EO, Smith JS, Deviren V, Shaffrey CI, Hart RA, Hostin R, **Mundis GM**, Kim HJ, Burton DC, ISSG: Reducing Rod Breakage and Nonunion in



Research fellow Pooria Hosseini presents his research at the 2016 AAOS Annual Meeting  
Research fellow Pooria Hosseini presents his research at the 2016 AAOS Annual Meeting

Pedicle Subtraction Osteotomy: The Importance of Rod Number and Configuration in 264 Patients with 2-Year Follow-Up. 50<sup>th</sup> Annual Meeting of the Scoliosis Research Society, Minneapolis, Minnesota. September 30-October 3, 2015 And 30<sup>th</sup> Annual Meeting of the North American Spine Society, Chicago, IL, October 14-17, 2015



Neuman BJ, Jain A, Sciubba DM, Klineberg EO, Kim HJ, Zebala LP, **Mundis GM**, Lafage V, Passias PG, Lafage R, Protosaltis TS, Hamilton DK, Scheer JK Ames CP, ISSG: Regional Thoracic and Lumbar Sagittal Cobb Angle Changes and UIV Determine Evolution of Cervical Alignment After ASD Surgery: Series of 171 Patients with 2 Year Follow Up. 50<sup>th</sup> Annual Meeting of the Scoliosis Research Society, Minneapolis, Minnesota. September 30-October 3, 2015



Buckland J, Vigdorich J, Lafage R, **Mundis GM**, Gum JL, Kelly MP, Hart RA, Ames CP, Smith JS, Bess S, Errico TJ, Schwab FJ, Lafage V, ISSG: Acetabular Anteversion Changes in Spinal Deformity Correction: Implications for Hip and Spine Surgeons. 30<sup>th</sup> Annual Meeting of the North American Spine Society, Chicago, IL, October 14-17, 2015



Bess S, Line B, Klineberg EO, Ames CP, Boachie-Adjei O, Burton DC, Deviren V, Gupta MC, Gum JL, Hart RA, Hamilton DK, Hostin RA, Kim HJ, Keibaish KM, Kelly MP, Lafage V, **Mundis GM**, Schwab FJ, Shaffrey CI, Smith JS, ISSG: Operative Treatment of Adult Spinal Deformity (ASD) Improves Health Related Quality of Life (HRQOL) for All Spinal Deformity Types, While Patients Treated Nonoperatively Demonstrate No Change at Mean 4.9, Years Follow-Up. 30<sup>th</sup> Annual Meeting of the North American Spine Society, Chicago, IL, October 14-17, 2015



**Mundis GM, Turner JD**, Deviren V, Uribe JS, Nunley PD, Shaffrey CI, Anand N, Park P, Okonkwo DO, Wang MY, Bess S, Kanter AS, Fessler RG, **Nguyen S**, ISSG: 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, Chicago, IL, October 14-17, 2015



Chou D, Wang MY, **Blaskiewicz DJ, Nguyen S**, Shaffrey CI, Okonkwo DO, Kanter AS, Deviren V, Uribe JS, **Eastlack RK**, Nunley PD, Anand N, Park P, **Mundis GM**, ISSG: 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, Chicago, IL, October 14-17, 2015



Scheer JK, Smith JS, Schwab FJ, Lafage V, Shaffrey CI, Bess S, Hart RA, Gupta MC, Protopsaltis TS, Hostin RA, Deviren V, Line B, Daniels A, Diebo BG, Lafage R, Zebala LP, **Mundis GM**, Jain A, Ailon T, Kim HJ, Hamilton DK, Burton DC, Klineberg EO, Ames CP, ISSG: Development of Validated Computer Based Preoperative Predictive Model for Proximal Junction Failure or Clinically Significant Proximal Junction Kyphosis with 86% Accuracy Based on 510 Adult Spinal Deformity Patients with Two-Year Follow-Up. 30<sup>th</sup> Annual Meeting of the North American Spine Society, Chicago, IL, October 14-17, 2015



Klineberg EO, Carlson BB, Protopsaltis TS, Passias PG, Smith JS, Ames CP, Hostin RA, Gupta MC, Lafage V, **Mundis GM**, Kelly MP, Hart RA, Schwab FJ, Burton DC, ISSG: Can Measurements on Cervical Radiographs Predict Concurrent Thoracolumbar Deformity and Provide a Threshold for Acquiring Full-Length Spine Radiographs? 30<sup>th</sup> Annual Meeting of the North American Spine Society, Chicago, IL, October 14-17, 2015



Scheer JK, Gum JL, Kelly MP, Schwab FJ, Hostin RA, Lafage V, Bess S, Protopsaltis TS, Kebaish KM, Burton DC, Gupta MC, Soroceanu A, Hart RA, **Mundis GM**, Jain A, Smith JS, Ames CP, ISSG: Ratio of Disability to Deformity Burden in 264 Adult Spinal Deformity Patients with Two-Year Follow-Up: Novel Insight into Drivers of Disability. 30<sup>th</sup> Annual Meeting of the North American Spine Society, Chicago, IL, October 14-17, 2015



Gomez J, Lafage V, Sciubba DM, Bess S, **Mundis GM**, Liabaud B, Shaffrey CI, MP, Ames CP, Smith, Passias PG, Burton DC, Errico TJ, Schwab FJ, ISSG: Adult Scoliosis Deformity (ASD) Surgery: Comparison of One Versus Two Attending Surgeons' Clinical Outcomes. 30<sup>th</sup> Annual Meeting of the North American Spine Society, Chicago, IL, October 14-17, 2015



Smith JS, Iyer S, Kim HJ, Kelly MP, Hart RA, Gupta MC, Hamilton DK, Brian J. Neuman, MD; Protopsaltis TS, **Mundis GM**, Lafage V, Passias PG, Klineberg EO, Ames CP, ISSG: Cervical Deformity Surgery does not Result in Acute Postoperative Dysphagia: Preliminary Results from a Prospective Cervical Deformity Study. North American Spine Society (NASS), 30<sup>th</sup> Annual Meeting, Chicago, IL, October 14-17, 2015



Dr. Akbarnia and other speakers field questions during podium presentation session at the 2016 IMAST Annual Meeting

Gupta MC, Henry J, Lafage V, Deviren V, Hart RA, Hostin RA, **Mundis GM**, Kim HJ, ISSG: Reducing Rod Breakage and Pseudarthrosis in PSO: The Importance of Rod Number and Configuration in 264 patients. American Academy of Orthopaedic Surgeons 2016 Annual Meeting, Orlando, Florida, March 1-5, 2016



Bronson W, Protopsaltis TS, Liabaud B, **Mundis GM**, Gum J, Burton DC, Schwab FJ, Lafage V, ISSG: Reliability of Intraoperative Prone Lateral Radiographs in Predicting Postoperative Standing Sagittal Alignment. American Academy of Orthopaedic Surgeons 2016 Annual Meeting, Orlando, Florida, March 1-5, 2016



Zavatsky JM, Wang MY, Park P, Chou D, Kanter AS, Uribe JS, Nunley P, **Eastlack RK**, **Akbarnia BA**, Anand N, **Nguyen S**, Mummaneni P, **Mundis GM**, ISSG: Impact of Multi-Level Interbody Fusion in The Treatment of Severe Adult Scoliosis (Thoracolumbar Coronal Cobb Angle > 50 Degrees). 9<sup>th</sup> Annual Meeting of Society of Lateral Access Surgery. San Diego, California, March 10-11, 2016



Rodgers WB, **Mundis GM**, Malaba P, Ombachi R, Otieno S, Cornwall GB: The Role of Lateral Access Surgery in Global Outreach Spine Surgery: Single Position Surgery and Other Applications of Lateral Surgery. 9<sup>th</sup> Annual Meeting of Society of Lateral Access Surgery. San Diego, California, March 10-11, 2016



**Mundis GM**, **Eastlack RK**, Mummaneni P, Okwonko DO, **Nguyen S**, Kanter AS, Anand N, Park P, Nunley P, Uribe JS, Zavatsky JM, Chou D, Deviren V, ISSG: Current MIS Deformity Correction and Alignment, Part 2, Techniques Fail to Optimize Spinopelvic Parameters in Patients with High Pelvic Incidence, 9<sup>th</sup> Annual Meeting of Society of Lateral Access Surgery. San Diego, California, March 10-11, 2016



Uribe JS, **Mundis GM**, Wang M, Anand N, Okonkwo DO, **Nguyen S**, Mummaneni P, Nunley P, Park P, Kanter AS, Zavatsky JM, **Eastlack RK**, **Akbarnia BA**, ISSG: Patients with High Pelvic Tilt Achieve the Same Clinical Success as Those with Low Pelvic Tilt After Minimally Invasive Deformity Surgery. 9<sup>th</sup> Annual Meeting of Society of Lateral Access Surgery. San Diego, California, March 10-11, 2016



**Eastlack RK**, **Mundis GM**, **Nguyen S**, Mummaneni P, Okonkwo DO, Kanter AS, Anand N, Park P, Nunley P, Uribe JS, **Akbarnia BA**, Chou D, Deviren V, ISSG: Early and Late Reoperation Rates and Etiologies Are Similar Between CMIS and HYB Techniques for ASD Correction. 9<sup>th</sup> Annual Meeting of Society of Lateral Access Surgery. San Diego, California, March 10-11, 2016, AND 23<sup>rd</sup> International Meeting On Advanced Spine Techniques (IMAST), Washington, DC, USA. July 13-16, 2016



Kanter AS, Tempel ZJ, Zavatsky JM, **Mundis GM**, **Nguyen S**, Chou D, Park P, Uribe JS, Wang M, Anand N, **Eastlack RK**, Mummaneni PV, Okonkwo DO, ISSG: Does Concave Versus Convex Approach Matter When Using Lateral Lumbar Interbody Fusion for Adult Scoliosis? Deformity Correction and Alignment, Part 2. 9<sup>th</sup> Annual Meeting of Society of Lateral Access Surgery. San Diego, California, March 10-11, 2016

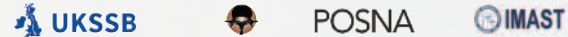


Than K, Nguyen S, Park P, Chou D, La Marca F, Uribe JS, Vogel T, Nunley P, **Eastlack RK**, Anand N, Kanter AS, Mummaneni P, **Mundis GM**, ISSG: What Is the Effect of Open Vs Percutaneous Screws On Complications Among Patients Undergoing Lateral Interbody Fusion for Adult Spinal Deformity Deformity Correction and Alignment, Part 2.

9<sup>th</sup> Annual Meeting of Society of Lateral Access Surgery. San Diego, California, March 10-11, 2016



**Hosseini P, Mundis GM, Eastlack RK, Pawelek J, Nguyen S, Akbarnia BA:** Do Surgeons Need to Rescrub During Operations That Last Longer Than Three Hours? **Best in Show Nomination** - 9<sup>th</sup> Britspine 2016 Conference. Nottingham, England. April 6-8, 2016 and LSRS, Chicago, Illinois, April 14-15, 2016  
2016 Pediatric Orthopaedic Annual Meeting. Indianapolis, Indiana. April 27-30, 2016, and **Whitecloud Best Basic Science Paper Award Nomination.** 23<sup>rd</sup> International Meeting On Advanced Spine Techniques (IMAST), Washington, DC, USA. July 13-16, 2016



Than K, Park P, Fu KM, **Nguyen S**, Wang M, Shaffrey C, Bess S, **Akbarnia BA**, Deviren V, Uribe J, Okonkwo D, **Mundis GM**, Mummaneni P, ISSG: Clinical and Radiographic Parameters Associated with Best Vs. Worst Clinical Outcomes in Minimally Invasive Deformity Surgery. Society for Minimally Invasive Spine Surgery Session at Spine Week. Singapore. May 2016



Miller EK, Ailon T, Neuman BJ, Klineberg EO, **Mundis GM**, Sciubba DM, Kebaish KM, Lafage V, Scheer JK, Smith JS, Hamilton DK, Bess S, Ames CP, ISSG: Assessment of a Novel Adult Cervical Deformity (ACD) Frailty Index (FI) as a Component of Preoperative Risk Stratification (Whitecloud Award Nominee – Best Clinical Paper). 23<sup>rd</sup> International Meeting on Advanced Spine Techniques, Washington, DC, July 13–16, 2016



Kim HJ, Bao H, Iyer S, Smith JS, Gupta MC, Albert TJ, Protosaltis TS, **Mundis GM**, Passias PG, Neuman BJ, Klineberg EO, Lafage V, Ames CP, ISSG: The Posterior use of BMP-2 in Cervical Deformity Surgery Does Not Result in Increased Complications: A Prospective Multicenter Study (Whitecloud Basic Science Nominees and Top-Scoring Abstracts). 23<sup>rd</sup> International Meeting on Advanced Spine Techniques, Washington, DC, July 13–16, 2016



Kim HJ, Diebo BG, Iyer S, Kelly MP, Sciubba DM, Schwab FJ, Lafage V, **Mundis GM**, Shaffrey CI, Smith JS, Hart RA, Burton DC, Bess S, Ames CP, Klineberg EO, ISSG: Thromboembolic Disease in Adult Spinal Deformity Surgery: Incidence and Risk Factors in 737 Patients. 23<sup>rd</sup> International Meeting on Advanced Spine Techniques, Washington, DC, July 13–16, 2016



Buckland AJ, Hart RA, **Mundis GM**, Sciubba DM, Lafage R, Errico TJ, Bess S, Vigdorchik J, Schwarzkopf R, Lafage V, ISSG: Acetabular Component Orientation in the Setting of Spinal Deformity Correction. 23<sup>rd</sup> International Meeting on Advanced Spine Techniques, Washington, DC, July 13–16, 2016



**Saigal R, Mundis GM, Eastlack RK, Nguyen S, Bagheri A, Bagheri R, Akbarnia BA:** Anterior Column Realignment: A Detailed Analysis of Neurologic Risk and Radiographic Outcomes. 23<sup>rd</sup> International Meeting on Advanced Spine Techniques, Washington, DC, July 13–16, 2016



**Mundis GM**, Lafage V, Ames CP, Hart RA, Burton DC, Bess S, Schwab FJ, Klineberg EO, Protosaltis TS, **Akbarnia BA**, Diebo BG, Kim HJ, Deviren V, ISSG: High Pelvic Incidence Predicts Alignment Failure in Patients Undergoing 3-Column Osteotomy. 23<sup>rd</sup> International Meeting on Advanced Spine Techniques, Washington, DC, July 13–16, 2016



Robert Eastlack and Gregory Mundis, Jr. in discussion at the SRS Annual Meeting

**Mundis GM**, Klineberg EO, Hart RA, Smith JS, Shaffrey CI, Ames CP, ISSG: Upper Cervical and Infra-Cervical Compensation in Cervical Deformity Patients. 23<sup>rd</sup> International Meeting on Advanced Spine Techniques, Washington, DC, July 13–16, 2016



Smith JS, Shaffrey CI, Kim HJ, Neuman BJ, Klineberg EO, Schwab FJ, Lafage R, Protosaltis TS, Passias PG, **Mundis GM**, Hart RA, Deviren V, Bess S, Ames CP, ISSG: Three-column Osteotomy for Correction of Cervical Deformity: Alignment Changes and Early Complications in a Multicenter Prospective Series of 24 Patients. 23<sup>rd</sup> International Meeting on Advanced Spine Techniques, Washington, DC, July 13–16, 2016



Smith JS, Line B, Bess S, Shaffrey CI, Kim HJ, **Mundis GM**, Klineberg EO, Schwab FJ, Lafage V, Passias PG, Protosaltis TS, Hart RA, Burton DC, Ames CP, ISSG: The Health Impact of Symptomatic Adult Cervical Deformity: Comparison to United States Population Norms and Chronic Disease States Based on the EQ5D. 23<sup>rd</sup> International Meeting on Advanced Spine Techniques, Washington, DC, July 13–16, 2016



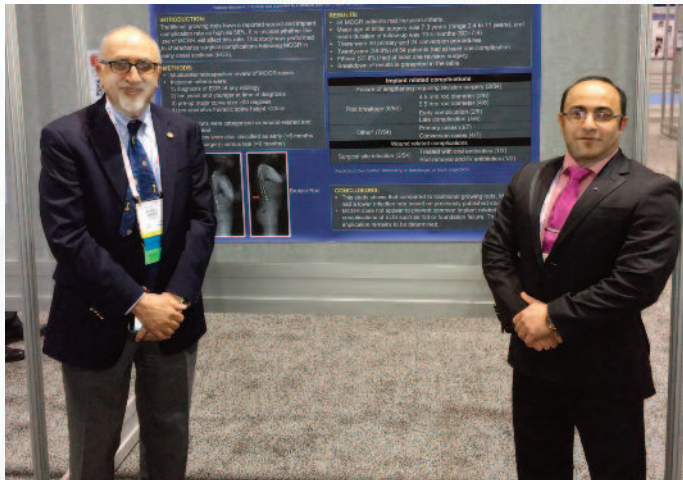
Kim HJ, Bao H, Iyer S, Smith JS, Kelly MP, Gupta MC, Albert TJ, **Mundis GM**, Passias PG, Neuman B, Klineberg E, Lafage V, Ames CP, ISSG: Cervical Deformity Surgery Does Not Result in Post-Operative Dysphagia: A Prospective Cohort Study. 23<sup>rd</sup> International Meeting on Advanced Spine Techniques, Washington, DC, July 13–16, 2016



**Eastlack RK, Mundis GM, Nguyen S, Mummaneni PV, Okonkwo DO, Kanter A, Anand N, Park P, Nunley PD, Uribe JS, Akbarnia BA, Chou D, Deviren V, ISSG:** Early and Late Reoperation Rates and Etiologies Are Similar Between cMIS and HYB Techniques for ASD Correction. 23rd International Meeting on Advanced Spine Techniques, Washington, DC, July 13-16, 2016



Liabaud B, Lafage R, Hart RA, Schwab FJ, Smith JS, Kim HJ, Hostin R, Passias PG, Ames CP, **Mundis GM, Burton DC, Bess S, Klineberg EO, Lafage V, ISSG:** Proximal Junctional Kyphosis (PJK) Can Be Predicted Following Adult Spinal Deformity (ASD) Surgery: Models Based On Regional Alignment Changes within the Fusion Area. 23rd International Meeting on Advanced Spine Techniques, Washington, DC, July 13-16, 2016



*Behrooz Akbarnia and Research Fellow Pooria Hosseini at 2016 AAOS Annual Meeting Poster Exhibit*

Nunley PD, Fessler RG, Park P, Zavatsky JM, **Mundis GM, Uribe JS, Eastlack RK, Chou D, Wang MY, Anand N, Kanter A, Deviren V, Mummaneni PV, ISSG:** How Does Case Type, Length of Stay, and Comorbidities Affect Medicare DRG Reimbursement for Minimally Invasive Surgery (MIS) for Deformity? 23rd International Meeting on Advanced Spine Techniques, Washington, DC, July 13-16, 2016



## Podium Presentations - Pediatric

Yilgor C, Cheung KMC, Kwan K, Samartzis D, Ferguson J, Nnadi C, Helenius I, Yazici M, Demirk G, Alanay A, **Akbarnia BA:** The Effect of Magnetically Controlled Growing Rod On the Sagittal Profile in Early Onset Scoliosis Patients. Eurospine, Copenhagen, Denmark, September 2-4, 2015



Yilgor C, Cheung KMC, Kwan D, Samartzis D, Alanay A, Ferguson J, Nnadi C, Helenius I, Yazici M, Demirkiran G, **Akbarnia BA:** Effects of Frequency of Distraction in Magnetically-Controlled Growing Rod Lengthening on Outcomes and Complications. Eurospine, Copenhagen, Denmark, September 2-4, 2015 And 9th Annual International Congress On Early Onset Scoliosis. Boston, Massachusetts. November 19-20, 2015 And 9th Britspine 2016 Conference. Nottingham, England. April 6-8, 2016



ICEOS



Hill G, Nagaraja S, **Akbarnia BA, Sponseller PD, Sturm PF, Emans JB, Pawelek JB, GSSG, Dreher M:** Retrieval Analysis of Traditional Distraction-Based Growing Rod Constructs for Early Onset Scoliosis: Scoliosis Research Society 50th Annual Meeting, Minneapolis, Minnesota, September 30-October 3, 2015



Ferguson J, **Hosseini P, Pawelek J, Mundis GM, Yaszay B, Helenius I, Cheung KMC, Demirkiran G, Alanay A, Senkoylu A, Elsabaie H, Akbarnia BA:** Magnetically-Controlled Growing Rods for Early Onset Scoliosis: A Multicenter Study of 23 Cases with Minimum 2 Years Follow Up. 2015 New Zealand Orthopaedic Association Annual Scientific Meeting. Te Papa, Wellington, New Zealand. October 18-21, 2015



Oetgen ME, Matthews A, Wang Y, Blakemore L, **McClung A, Pawelek JB, Sponseller PD, Perez-Gruoso FS, Akbarnia BA:** Radiographic Outcome Differences in Growing Rod Constructs Using Tandem Vs. Wedding Band Connectors. 9th Annual International Congress On Early Onset Scoliosis. Boston, Massachusetts. November 19-20, 2015 And 23rd International Meeting on Advanced Spine Techniques (IMAST), Washington, DC, USA. July 13-16, 2016



**Choi E, Yaszay B, Mundis GM, Hosseini P, Pawelek JB, Alanay A, Berk H, Cheung KMC, Demirkiran G, Ferguson J, Gregg T, Helenius I, La Rosa G, Senkoylu A, Akbarnia BA:** Implant Complications After Magnetic-Controlled Growing Rods for Early Onset Scoliosis. 9th Annual International Congress On Early Onset Scoliosis. Boston, Massachusetts. November 19-20, 2015

ICEOS

Polly DW, Ackerman SJ, Schneider KBA, **Pawelek JB, Akbarnia BA:** Cost Analysis of Magnetically-Controlled Growing Rods Compared with Traditional Growing Rods for Early Onset Scoliosis in The United States. 9th Annual International Congress On Early Onset Scoliosis. Boston, Massachusetts. November 19-20, 2015

ICEOS

Sponseller PD, **McClung A, Pawelek JB, El Hawary R, Thompson GH, Smith JT, Vitale MG, Akbarnia BA, Bachabi M:** Growing Rod and Vertical Expandable Prosthetic Titanium Rib Perform Differently for Idiopathic Early Onset Scoliosis at 5-Year Follow-Up. 9th Annual International Congress On Early Onset Scoliosis. Boston, Massachusetts. November 19-20, 2015

ICEOS

**Hosseini P, Pawelek J, Mundis GM, Yaszay B, Ferguson JA, Helenius IJ, Cheung KM, Akbarnia BA:** Magnetically-Controlled Growing Rods for Early Onset Scoliosis: A Study of 23 Cases with 2 Years Follow Up. American Academy of Orthopaedic Surgeons 2016 Annual Meeting, Orlando, Florida, March 1-5, 2016



**Hosseini P, Pawelek J, Nguyen S, Thompson GH, Shah SA, Flynn JM, Dormans JP, Akbarnia BA, GSSG:** Rod Fracture and Lengthening Intervals in Traditional Growing Rods: Is There a Relationship? American Academy of Orthopaedic Surgeons 2016 Annual Meeting. Orlando, Florida, March 1-5, 2016



Nnadi C, **Hosseini P, Rehak L, Repko M, Grevitt M, Aydinli U, Carl A, Akbarnia BA:** Analysis of Segmental Mobility Following a Novel Posterior Apical Short-Segment Correction for Adolescent Idiopathic Scoliosis. 9th Britspine 2016 Conference. Nottingham, England. April 6-8, 2016



**Akbarnia BA**, Nnadi C, Cheung KMC, Ferguson J, **Mundis GM**, Thakar C, **Pawelek J**: Comparison of Primary and Conversion Surgery with Magnetically Controlled Growing Rods in Children with Early Onset Scoliosis. 9th Britspine 2016 Conference. Nottingham, England. April 6-8, 2016



**Akbarnia BA**, Cheung KMC, Kwan K, Samartzis D, Ferguson J, Thakar C, Panteliadis P, Nnadi C, Helenius I, Yazici M, Demirkiran GH, Alanay A: The Effect of Magnetically Controlled Growing Rod on Sagittal Profile in Early-Onset Scoliosis Patients. 9th Britspine 2016 Conference. Nottingham, England. April 6-8, 2016



**Akbarnia BA**, Carl AL, Grevitt MP, Nnadi C, Repko M, Crandall DG, **Hosseini P**, Aydinli U, Zabka M, Seme SJ: Preservation of Spine Motion in The Surgical Treatment of AIS Patients Using an Innovative Apical Fusion Technique: A 2 Year Follow-Up Study. 23rd International Meeting on Advanced Spine Techniques (IMAST), Washington, DC, USA. July 13-16, 2016



Harris LR, Andras LM, **Mundis GM**, Sponseller PD, Emans JB, Skaggs DL, GSSG: Five or More Proximal Anchors, Including Upper End Vertebra, Protects Against Reoperation. 23rd International Meeting on Advanced Spine Techniques, Washington, DC, July 13-16, 2016



## Invited Speakers:

### Behrooz A. Akbarnia, MD:



EOS – Where We Are and What We Know Now? **Deformity Down Under Annual Meeting, Sydney Australia, August 28-29, 2015**

Magnetic Growing Rods in Eos. **Deformity Down Under Annual Meeting, Sydney Australia, August 28-29, 2015**

Finite Element Analysis of Lordosis Restoration with All and Hyper-Lordotic Cage Placement. **Deformity Down Under Annual Meeting, Sydney Australia, August 28-29, 2015**

Comparison of Radiographic Results After Minimally Invasive, Hybrid and Open Surgery for Adult Spinal Deformity: A Multicenter Study of 184 Patients. **Deformity Down Under Annual Meeting, Sydney Australia, August 28-29, 2015**

A Historical Perspective of the Management of Early Onset Scoliosis, Pre-Meeting Course, **50th Annual Meeting of the Scoliosis Research Society Annual Meeting, Minneapolis, Minnesota, September 29, 2015**

History of Scoliosis Research Society and Evolution of Spine Deformity Care. **Iranian Spine Society Meeting Tehran, Iran. October 19, 2015**

EOS: What Have We Learned. **Shafa Hospital, Iran University of Medical Science, Tehran, Iran. October 30, 2015**

Historical Evolution of Scoliosis Research Society and Spinal Deformity Care. Friesen Lecture. **Departure of History and Philosophy of Medicine, University of Kansas. Kansas City, Ks. November 12, 2015**

When and How to Do Distractions with MCGR. **9th Annual International Congress On Early Onset Scoliosis. Boston, Massachusetts. November 19-20, 2015**

Historical Evolution of Scoliosis Research Society and Spine Deformity Care. **Daniel Benson Lectureship, University of**

**California, Davis, Sacramento, California, November 30, 2015**

Principles in The Treatment of Early Onset Scoliosis. **Daniel Benson Lectureship, University of California, Davis, Sacramento, California, December 1, 2015**

When Is Lateral Surgery Not Indicated for Adult Spinal Deformity? **9th Annual Meeting of Society of Lateral Access Surgery. San Diego, California, March 10-11, 2016**

Evolution and Principles of Care for EOS: From Harrington to MCGR. **Rizzoli Institute Meeting: Scoliosis When It Occurs Early in Life and Not Only Scoliosis: State of The Art of Diagnosis and Treatment. Bologna, Italy April 15, 2016**

EOS Classification and Treatment Options. **Meeting of Minds Advanced Spinal Deformity Symposium. Chicago, Illinois. April 22-23, 2016**

Anterior Alternatives to PSO. **Society of Lateral Access Surgery at 2016 Spine Week. Singapore. May 19, 2016**

“ACR” Case Discussion. **Asian Pacific Spine Society at Spine Week. Singapore. May 19, 2016**

Growing Rods: What Works, What Doesn't? – **Asian Pacific Spine Society at Spine Week. Singapore. May 20, 2016**

Posterior Approach: Magnetic Growing Rod System – **Asian Pacific Spine Society at Spine Week. Singapore. May 20, 2016**

Lateral Lumbar Interbody Fusion: XLIF – **Asian Pacific Spine Society at Spine Week. Singapore. May 20, 2016**

Evolution and Principles of Care for EOS: What Do We Know in 2016? **University of New Mexico Visiting Professorship Meeting. Albuquerque, New Mexico, June 9, 2016**

Interbody Alternatives to PSO. **University of New Mexico Visiting Professorship Meeting. Albuquerque, New Mexico, June 9, 2016**

Distraction Methods in Magnetically Controlled Growing Rods: **Scoliosis Research Society Traveling Fellows Meeting, Rady Children's Hospital, San Diego, California. June 24, 2016**



Magnetically Controlled Growing Rods for EOS; What We Have Learned? **2016 Annual San Diego Spine Visiting Professorship. La Jolla, California. July 29, 2016**

### Gregory M. Mundis. Jr., MD:



MIS Approaches to Deformity - **50th Annual Scoliosis Research Society Annual Meeting, Minneapolis, MN, September 2015**

MIS-When To Go Anterior, Lateral, Posterior. **Premeeting Course: 50th Annual Scoliosis Research Society Annual Meeting, Minneapolis, MN, September 2015**

Safety in Spine Surgery—Operate There Are No Other Options  
MIS—When To Go Anterior, Lateral, Posterior - MIS—When To Go  
Anterior, Lateral, Posterior – ICL: **50th Annual Scoliosis Research  
Society Annual Meeting, Minneapolis, MN, September 2015**

Spine Injuries in the Athlete, **San Diego Sports Medicine  
Fellowship Lecture Series, San Diego, CA, September 24, 2015**

MIS in Complex Spinal Deformity, **Premeeting Course: 30<sup>th</sup> Annual  
Meeting of the North American Spine Society Annual Meeting,  
Chicago, IL, October 13, 2015**

Misonix: Ultrasonic Bone Scalpel Assisted MIS TLIF Deformity Correction  
with the Ultrasonic Bone Scalpel. **Solution Showcase Theater,  
Technical Exhibition, 30<sup>th</sup> Annual Meeting of the North American  
Spine Society Annual Meeting, Chicago, IL, October 13, 2015**

Unsolved Problems in EOS, **9<sup>th</sup> Annual International Congress On Early  
Onset Scoliosis. Boston, Massachusetts. November 19-20, 2015**

Not Every Growing Rod Surgery Can Be an MCGR Case, **9<sup>th</sup> Annual  
International Congress On Early Onset Scoliosis. Boston,  
Massachusetts. November 19-20, 2015**

Deformity Correction with MIS or Hybrid Approaches, **Fireside  
Chat/Case Debates, 9<sup>th</sup> Annual SOLAS Meeting, Carlsbad, CA,  
March 10-12, 2016**

Eight Steps to Efficient XLIF and Complication Avoidance - **5<sup>th</sup>  
Annual Australian XLIF Usergroup Meeting Melbourne,  
Australia, March 20-21, 2016**

ACR: Surgical Technique - **5<sup>th</sup> Annual Australian XLIF Usergroup  
Meeting Melbourne, Australia, March 20-21, 2016**

Case Presentations: Adult Degenerative Deformity - **5<sup>th</sup> Annual  
Australian XLIF Usergroup Meeting Melbourne, Australia,  
March 20-21, 2016**

Degenerative Scoliosis in the Literature - **5<sup>th</sup> Annual Australian  
XLIF Usergroup Meeting Melbourne, Australia,  
March 20-21, 2016**

IGA-Integrated Global Alignment - **5<sup>th</sup> Annual Australian XLIF  
Usergroup Meeting Melbourne, Australia, March 20-21, 2016**

Lateral Minimally Invasive Corpectomy: Technique and Applications -  
**5<sup>th</sup> Annual Australian XLIF Usergroup Meeting Melbourne,  
Australia, March 20-21, 2016**

Using SurgiMap to Help Assess & Plan Adult Deformity Cases -  
**Degenerative and Complex Conditions in the Aging Spine,  
DePuy Synthes Institute, San Diego, CA, May 6 - 8, 2016**

Osteotomies & Osteotomy Planning - **Degenerative and Complex  
Conditions in the Aging Spine, DePuy Synthes Institute,  
San Diego, CA, May 6 - 8, 2016**

Deformity Surgery is just a way to place 20 Screws, 2 Rods, Loads of  
Biologics and Fund Your Kids College Education, Pro Surgery –  
**DEBATE, Spine Technology and Educational Group  
Organization, 13<sup>th</sup> Annual “State of Spine Surgery – A Think  
Tank”, Los Cabos, Mexico, June 30–July 2, 2016**

Can we Make Spine Surgery More Precise? Surgical planning tools –  
**Spine Technology and Educational Group Organization, 13<sup>th</sup>  
Annual “State of Spine Surgery – A Think Tank”, Los Cabos,  
Mexico, June 30–July 2, 2016**

Innovative Technologies/Updates – II, Use of ultrasonic bone scalpel  
in treatment of spinal deformity – **Spine Technology and  
Educational Group Organization, 13<sup>th</sup> Annual “State of Spine  
Surgery – A Think Tank”, Los Cabos, Mexico, June 30–July 2, 2016**

Spine Deformity Care in an Outreach Setting: Giving Back -  
**2016 Annual San Diego Spine Visiting Professorship. La Jolla,  
California. July 29, 2016**

### **Robert K. Eastlack, MD:**

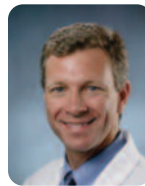


Technical and Practical Considerations of Lateral  
Lumbar Interbody Fusion (LLIF) in Spinal Deformity  
Surgery, **University of California, San Francisco,  
San Francisco, CA, November 2015**

Spine Deformity Solutions: A Hands-On Course:  
**American Association of Neurosurgeons (AANS)  
and the Scoliosis Research Society (SRS), Oquendo  
Center, Las Vegas, NV, February 4–6, 2016**

LIF Approaches for Spondylolisthesis - **2016 Annual San Diego  
Spine Visiting Professorship. La Jolla, California. July 29, 2016**

### **James D. Bruffey, MD:**



Future Trends in Bundled Care/ACOs - **2016 Annual  
San Diego Spine Visiting Professorship. La Jolla,  
California. July 29, 2016**

### **Pooria Hosseini, MD, M.Sc.:**



Preliminary Results of Anterior Lumbar Interbody  
Fusion, Anterior Column Realignment for The  
Treatment of Sagittal Malalignment - **2016 Annual  
San Diego Spine Visiting Professorship. La Jolla,  
California. July 29, 2016**

### **Ravi Srinivas, MD:**



Early and Late Reoperation Rates and Etiologies for  
cMIS and HYB Techniques for ASD Correction - -  
**2016 Annual San Diego Spine Visiting  
Professorship. La Jolla, California. July 29, 2016**

### **Pat Kostial, RN, BSN:**



Adolescent Idiopathic Scoliosis (AIS) – **Christus  
Muguerza Hospital Del Parque, Chihuahua, CHIH,  
Mexico, August 11, 2016**

Early Onset Scoliosis (EOS) – **Christus Muguerza  
Hospital Del Parque, Chihuahua, CHIH, Mexico,  
August 11, 2016**

Postoperative Patient Care: Scoliosis and Spinal Deformity Surgery  
– **Christus Muguerza Hospital Del Parque, Chihuahua, CHIH,  
Mexico, August 11, 2016**

# 2015-2016 Table of Meeting Icons and Bibliography Acronyms

Deformity Down Under Annual Meeting, Sydney Australia, August 28-29, 2015



Eurospine, Copenhagen, Denmark, September 2-4, 2015



50<sup>th</sup> Annual Meeting of the Scoliosis Research Society Annual Meeting, Minneapolis, Minnesota, September 29, 2015



San Diego Sports Medicine Fellowship Lecture Series, San Diego, CA, September 24, 2015

UC San Diego

30<sup>th</sup> Annual Meeting of the North American Spine Society Annual Meeting, Chicago, IL, October 13, 2015



Iranian Spine Society Meeting Tehran, Iran. October 19, 2015



Shafa Hospital, Iran University of Medical Science, Tehran, Iran. October 30, 2015



9<sup>th</sup> Annual International Congress On Early Onset Scoliosis. Boston, Massachusetts. November 19-20, 2015

**ICEOS**


Departure of History and Philosophy of Medicine, University of Kansas. Kansas City, Kansas. November 12, 2015



Daniel Benson Lectureship, University of California, Davis, Sacramento, California, November 30 - December 1, 2015

**UCDAVIS**

American Association of Neurosurgeons (AANS) and the Scoliosis Research Society (SRS), Oquendo Center, Las Vegas, NV, February 4-6, 2016

**AANS**  **SRS**

American Academy of Orthopaedic Surgeons 2016 Annual Meeting. Orlando, Florida, March 1-5, 2016

**AAOS**

9<sup>th</sup> Annual Meeting of Society of Lateral Access Surgery. San Diego, California, March 10-11, 2016

 **SOLAS**

9<sup>th</sup> Britspine 2016 Conference. Nottingham, England. April 6-8, 2016



5<sup>th</sup> Annual Australian XLIF Usergroup Meeting Melbourne, Australia, March 20-21, 2016

Rizzoli Institute Meeting: Scoliosis When It Occurs Early in Life and Not Only Scoliosis: State of The Art of Diagnosis and Treatment. Bologna, Italy April 15, 2016



Meeting of Minds Advanced Spinal Deformity Symposium. Chicago, Illinois. April 22-23, 2016

LSRS Annual Meeting. Chicago, Illinois 14-15 April 14-15, 2016



Pediatric Orthopaedic Society of North American Annual Meeting, Indianapolis, Indiana, April 27-30, 2016  
Degenerative and Complex Conditions in the Aging Spine, DePuy Synthes Institute, San Diego, CA, May 6 - 8, 2016

**POSNA**

Asian Pacific Spine Society at Spine Week. Singapore. May 19, 2016



University of New Mexico Visiting Professorship Meeting. Albuquerque, New Mexico, June 9, 2016

**UNM**

Scoliosis Research Society Traveling Fellows Meeting, Rady Children's Hospital, San Diego, California. June 24, 2016

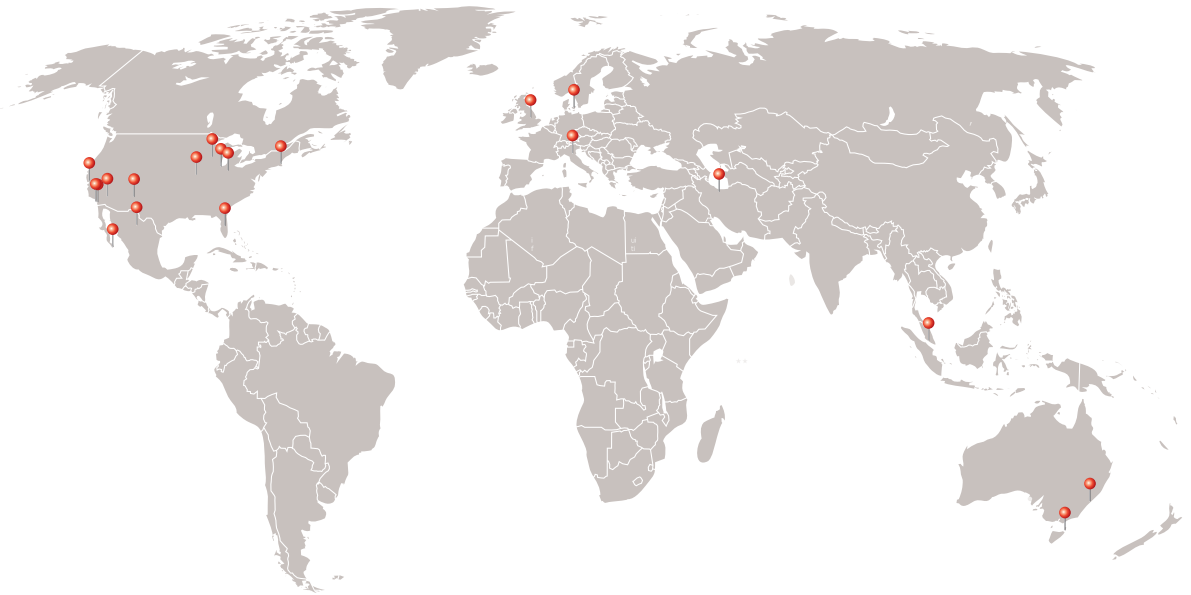


13<sup>th</sup> Annual "State of Spine Surgery - A Think Tank", Los Cabos, Mexico, June 30-July 2, 2016

Christus Muguerza Hospital Del Parque, Chihuahua, CHIH, Mexico, August 11, 2016



## Invited Lectures Sites 2015-2016



*SRS Traveling Fellows attend cadaveric lab with Clinical fellow Ravi Srinivas and Gregory Mundis, Jr.*



*San Diego SRS Hosts with Traveling Fellows at Rady Childrens Hospital for Children; San Diego (RCHSD). From left: Kota Watanabe, Ilharborde Brice, Behrooz Akbarnia, Dennis Wenger (RCHSD), Keith Luk, Peter Newton (RCHSD), Burt Yaszay (RCHSD) and Bangping Qian.*



*Scripps Team hosts SRS Traveling Fellows in surgery: Gregory Mundis, Jr, Robert Eastlack, Behrooz Akbarnia, Kota Watanabe, Ilharborde Brice, Bangping Qian and Keith Luk*



# A Year to Remember



2016 Harrington Lecture titled "Art is Long, Life is Short: Lessons Learned in the Life of a Spine Surgeon" given by Behrooz A. Akbarnia on September 22nd, 2016.



A dream team: GSO volunteers and staff with patient Kevin. From left, Gretchen Cochran Matzelle, GSO Executive Director Bridget Mortell, Jessica Flores and Jodie Allowatt Bosanko



Mentorship: Behrooz Akbarnia looks on as Gregory Mundis, Jr. leads the team of volunteer surgeons, PAs and nurses as well as local orthopedic surgeons, their residents and medical students on the first day of surgery at Christus Muguerza Hospital in Chihuahua, MX.

## 2016 Scoliosis Research Society Harrington Lectureship

Dr. Behrooz Akbarnia was honored this year as the 2016 Harrington Guest Lecturer, having been invited to speak in this role by 2016 SRS president David W. Polly, Jr., MD. Dr. Akbarnia provided a soulful review of his life as a spine surgeon and scientist entitled: "Art is Long; Life is Short: Lessons Learned in the life of a Spine Surgeon". He bestowed upon the audience the lessons to be learned during the stages of one's career; none to the exclusion of the other. The key themes of mentorship and balance resounded throughout his message.

SDSF leadership is so very proud of Dr. Akbarnia for this latest achievement. He is the epitome of a mentor to many of us who have trained and/or worked under him. Dr. Akbarnia's speech will be published in an upcoming publication of Spine Deformity Journal, the official publication of the Scoliosis Research Society. It is being considered to become "required reading" for new members of the SRS.

Congratulations Dr. Akbarnia!!



Behrooz Akbarnia receives Harrington Lectureship plaque from 2016 SRS President David W. Polly, Jr. during 2016 SRS Annual Meeting in Prague, Czech Republic



Congratulations to our past research coordinator Bo Robertson and his new bride Audrey. Current and past staff of SDSF Research team attended the happy event this summer. From left: Jeff Pawelek, Pooria Hosseini, Behrooz Akbarnia, Bo Robertson, Audrey Robertson, Stacie Nguyen, Jayla Kyaw, and Daniel Zhang.

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Dr.'s Robert and Jennifer Eastlack	Champion
Dr. Gregory and Lesley Mundis	Champion
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# SUPPORTING THE FOUNDATION



The San Diego Spine Foundation has established an Endowment Fund for those who wish to support the foundation's research, education and outreach efforts for years to come. SDSF also accepts unrestricted donations to cover ongoing operating expenses.

I also want to thank each and every donor listed on page 26 who has helped us this past year, increasing our Endowment Fund to support our research, education and outreach mission. As you consider year-end giving, we hope you'll consider donating to SDSF. **We need your help now more than ever.**

Donations throughout the academic year (August 1 through July 31) are cumulative and will be acknowledged on the foundation's annual report following each academic year. We hope you will you consider a donation to ensure we can continue our work for years to come?



**Todd J. Albert, MD, FACS**

## SAVE THE DATE!

### 2017 SAN DIEGO VISITING PROFESSORSHIP

WITH TODD J. ALBERT, MD, FACS

FRIDAY, JULY 29, 2017

Surgeon-in-Chief and Medical Director,  
Korein-Wilson Professor of Orthopaedic Surgery  
Hospital for Special Surgery  
Chairman and Professor of Orthopaedic Surgery,  
Weill Cornell Medical College  
2017 Scoliosis Research Society President

### Acknowledgments:

The SDSF would like to again thank Brian Greer, President of Golmage Media Services for his ongoing contributions including the development of our Annual Reports since 2013 and for our website development and management: [www.sandiegospinefoundation.org](http://www.sandiegospinefoundation.org). Brian, you are one in a million!



*Brian Greer*

### About the Cover

The cover is provided as a courtesy of Anne Cotrel and the Cotrel Foundation.

The drawing is another example of Anne's mastery of form, movement and color, while drawing the eye to the beauty of the spine as well as the human form.

#### Anne Cotrel:

Ecole Superieure Des Arts Decoratifs – Paris. B.A. in Visual Art, Concordia University, Montreal, Quebec.

Anne has lived and worked in Canada, Italy and German speaking Switzerland. Her last personal exhibit took place at the Centre Culturel Zoroastre in Paris, April, 2014. The proceeds from Anne's art sales help to support the Cotrel Foundation.





**San Diego  
Spine Foundation**  
Established in 2006

San Diego Spine Foundation  
6190 Cornerstone Ct; Ste. 212

San Diego, CA 92121

[kostial.pat@sandiegospinefoundation.org](mailto:kostial.pat@sandiegospinefoundation.org)  
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