

2017 Annual Report
Academic Year
August 2016 – July 2017



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 San Diego Spine Foundation,

This year, I would like to begin my message with a big thank you to everyone who has helped SDSF over the years. Seemingly small actions and deeds by individuals and sponsors all add up, and as always, have allowed us to grow and evolve to accomplish our goals. As we enter into our next decade of service, it is my hope that we can continue to build bridges in the spine community, not only in San Diego, but across the globe.

Our 2017 Visiting Professorship Annual meeting was especially memorable this year. It was the first time we had not one but two notable distinguished visitors. Our first was Todd J. Albert, MD, FACS, from the Hospital of Special Surgery in New York and current Scoliosis Research Society President. Our next visitor was Juan Uribe, MD, FAANS, from Barrows Neurological Institute in Phoenix. This meeting was exceptional, thanks to the hard work of Chairmen Greg Mundis, Jr., from Scripps Clinic/SDSF and Steven R. Garfin, Distinguished Professor and Chair, Department of Orthopaedic Surgery, at UCSD. Finally, a big thanks to all of our course faculty representing eight San Diego institutions, all of whom again volunteered their time to share their expertise with the San Diego medical community. Next year, we will again have two visiting Professors including Paul D. Sponseller, MD, from Johns Hopkins University, and James S. Harrop, MD, FACS from Thomas Jefferson University as our Pediatric and Adult Keynote speakers. Peter O. Newton, MD, Chief of the Division of Orthopaedic and Scoliosis at Rady Children's Hospital-San Diego and Clinical Professor at UCSD, has graciously agreed to Co-Chair this meeting along with Robert K. Eastlack, MD, of Scripps Clinic/SDSF.

At the time of this writing, SDSF's faculty, staff and clinical fellows involvement with outreach continues to grow. To date, three clinical fellows have attended four mission trips with two more fellows scheduled to contribute before the end of this academic year. Their exposure to a medical mission not only hones their surgical skills, it helps to build character and a culture of giving back whenever and however possible. SDSF will continue to support these activities well into the future and has just become the recipient of a multimillion dollar donation of pediatric implants to be given to outreach programs around the globe in 2017 and beyond. We cannot thank the donor (who has asked to remain anonymous) enough for this extremely generous gift, one which will help children around the globe receive badly needed corrective spine surgery.

What is the future? In addition to continuing with our strong ongoing research program, SDSF is collaborating with other San Diego spine-based groups and institutions to generate important patient outcome-based research. As such, SDSF plans to increase its staff to accommodate the growing needs of the foundation, not only for research, but also for education and outreach. It is my vision to see SDSF team up with the San Diego spine community, leading the way with our mission as our compass, to improve the quality of our patient's care in San Diego and around the world.

Will you consider supporting our foundation again so we can continue our efforts for many years to come? Please see page 19 for details on how you can help. We remain grateful for your generosity and support.

Best regards,

Behrooz A. Akbarnia

Behrooz A. Akbarnia, MD

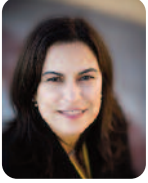
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*Faculty, San Diego Spine Fellowship
Scripps Clinic,
La Jolla, CA.*



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

San Diego Combined Spine Fellowship Program Fellowship Co-Directors Message 2016-17

Our 2016-17 Fellowship year has been one of the best yet! Our 2 Clinical Fellows, Justin B. Ledesma, MD and Amrit D. Khalsa, MD hit the ground running both clinically and academically. Justin was SDSF's first fellow to spend one week of intensive clinical exposure at Global Spine Outreach's mission trip to Chihuahua, Mexico in August, 2016. Justin jumped head first into his fellowship, as his mission trip started during his 2nd week of training. Amrit attended 2 GSO mission trips, one in Monterrey, Mexico in March 2017 followed shortly thereafter in Cali, Columbia in May 2017. Justin has returned to his home town in Tucson, AZ to practice spine surgery with a local orthopedic group. Amrit returns to Drexel University in Philadelphia, PA, in a faculty role, where he did his residency training. We are extremely proud of these two fine, young men.

On August 1st, 2017, we began our new academic year with 3 clinical fellows: Nick Ghazarian, DO from Valley Hospital Medical Center in Nevada, Eric Varley, DO from Michigan State University in Michigan, and Randall Hlubek, MD, who is doing a 9-month rotation as a PGY-6 neurosurgical resident fellow from Barrows Neurological Institute in Arizona. Each has selected a research project and will attend a mission trip to continue the legacy started in 2016. We will also welcome back Ravi Srinivas, MD, who plans to complete an additional 3 months of spine training from May – July 2018. This is the first academic cycle to have 3 four month rotations. Donald Blaskiewicz has assumed the role of lead faculty of the new 3rd rotation. Thanks Don!

Last, but not least, we are pleased to announce our new clinical spine fellows for 2018-19: Nicole Record, DO and Daniel Thibaudeau, MD. Both Nicole and Daniel are completing their orthopedic residency training at Seton Hall University in Paterson, NJ. We look forward to the future with our fellows and faculty. The best is yet to come!

Robert K. Eastlack, M.D.

Gregory M. Mundis, Jr., MD

Welcome Naval Medical Center San Diego Orthopedic Residents

SDSF is proud to announce our new collaboration with the Orthopedic Residency Training Program at NMCS D. Beginning July 1, 2017, 5 PGY-4 residents will complete 10 week rotations with our 6-full-time clinical faculty. Each resident attends clinics and surgeries as well as our weekly spine and research conferences as well as scheduled Journal Club meetings. Each resident is responsible for giving one assigned lecture as part of their spine rotation training. We thank the NMCS D Orthopedic Faculty for entrusting their residents to us. Please welcome this year's 4 PGY-4 orthopedic residents:



Lt. Wei-Wei Wu
July 3 - Sept. 10, 2017



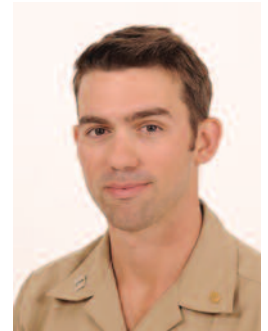
Lt. Ryan Myers
Sept. 11 - Nov. 19, 2017



Lt. Daniel Houskamp
Nov. 20, 2017 - Feb. 11, 2018



Lt. Michael Quacinella
Feb. 12 - April 22, 2018



Lt. Clarence Steele
April 23 - June 30, 2018



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, providing members of industry the opportunity to attend lectures and case presentations for their educational benefit.



Dr's Albert and Mundis: Good friends catching up

Our 2017 Annual Visiting Professorship Meeting was a historic first for SDSF, marking our first ever meeting with 2 distinguished visiting professors: Todd J. Albert, MD, FACS OF Hospital for Special Surgery in New York and Juan Uribe, MD FAANS of Barrows Neurological Institute in Phoenix, Arizona.

SDSF also remains humbled and grateful to our San Diego area spine experts who donate their time each year as our faculty. 2017's program was exceptional, thanks to the hard work of our Program Chairs, Gregory M. Mundis, Jr. and Steven R. Garfin, Distinguished Professor and Chair of Orthopedic Surgery at UCSD as well as to Jay D. Turner, MD, PhD of Barrows Neurological Institute who served as our first Program Director. Our VP meeting was again held at the Hilton La Jolla Torrey Pines Hotel on Friday, July 28, 2017.

Many thanks to all who helped and attended.

Reunion of UCSD past and present colleagues: Behrooz Akbarnia, R. Todd Allen, Choll Kim, Steven R. Garfin, Peter O. Newton and Liz Stimson



Exhibitors were an important part of our meeting's support and success



VISITING PROFESSORSHIP 2017



*Faculty from Bottom Left: Kamshad Raiszadeh, Donald Blaskiewicz, Choll Kim, Maneesh Bawa
Faculty from Top Left: Peter O. Newton, Jay D. Turner, Behrooz A. Akbarnia, Gregory M. Mundis, Jr., Juan Uribe, James D. Bruffey, Todd J. Albert, Todd Allen and Robert K. Eastlack, along with former (1977) Fellow Nosrat Javidan*



Dr. Todd Allen addressing questions during panel session

We also had a record-breaking number of Exhibitors this year - 16.

This educational forum could not take place without the support of our exhibitors; THANKS TO YOU ALL!

Alphatec Spine
Bioventus
Centinel Spine
DePuy Synthes

OrthoFix
SeaSpine
Si-Bone
Spinal Elements

Globus Medical
K2M
Medtronic
NuVasive

Stryker
Titan Spine
Zimmer Biomet
Cerapecdics/SpineWave

Research Coordinators: A History of Excellence

Since the early days at San Diego Spine Foundation, we have always fondly referred to our relationship with our staff and fellows as that of a family, and we meant it. We at SDSF are very much like proud parents watching our children grow and spread their wings. Our fellows are featured every year, as they should. But this year, we wanted to shine the spot light on our past Research Coordinators. Since the early days with Sarah Canale (now Dr. Sarah Canale) leading the way, our Research Coordinators have played a vital role in the development of our research department and its ability to produce meaningful research. We now have six former Coordinators who have moved on to pursue their personal goals, be it in medicine, research or healthcare. We are so proud of each and every one of them!



After working at SDSF as our first full-time Research Coordinator well over 10 years ago, **Sarah Canale, MD** attended Northwestern University Feinberg School of Medicine and graduated in 2011. She went on to complete her pediatric residency training in 2014 at the University of Vermont School of Medicine. Since that time, she practices as a full-time pediatrician at Somerville Pediatrics, an outpatient practice of Cambridge Health Alliance. She is a clinical instructor at Harvard Medical School and enjoys integrating clinical teaching into her current practice.

She has had one publication since leaving SDSF entitled, “Identification of Critical Congenital Heart Disease in Vermont: The Role of Universal Pulse Oximetry Screening in a Rural State” published in *Clinical Pediatrics*, June 2015. In addition, she wrote and published an instructional children’s book, entitled, “My Momma,” which she used as the basis for informal parenting classes at a local residential drug treatment program for new mothers. She continues to enjoy writing and research and hopes to engage in more projects in the years to come. Sarah resides in Boston, MA with her husband Zac and daughter Olive Lily.

RESEARCH COORDINATORS



Tina Chen, CCRA is a Principal Clinical Research Monitor/Supervisor at Medtronic, Plc. She graduated from the University of California, San Diego with a bachelor of science for biopsychology. Tina’s career in research started as a Research Coordinator at the San Diego Spine Foundation where she was first introduced to clinical research trials.

She is currently the lead monitor to multiple global clinical trials. She has over ten years of combined research experience in cardiovascular, circulatory, respiratory, nervous system and musculoskeletal disorders. Prior to her current position, Tina worked as a Senior Clinical Research Monitor at United Therapeutics where she researched treatments for Pulmonary Arterial Hypertension and Idiopathic Pulmonary Fibrosis. She also worked at Pharmaceutical Product Development (PPD), Inc. where she participated in multiple clinical trials, one of which included a drug which was FDA approved in 2012.

Furthermore, Tina is a member and certified as a Clinical Research Associate (CCRA) by the Association of Clinical Research Professionals (ACRP). She volunteers as an item writer writing exam questions for the standardized ACRP CRA Certification exam. Her passions include giving back to the community and helping people through volunteering, teaching and training others. She currently resides in Diamond Bar, CA and is looking forward to her upcoming projects in Minimally Invasive Surgical Technologies.

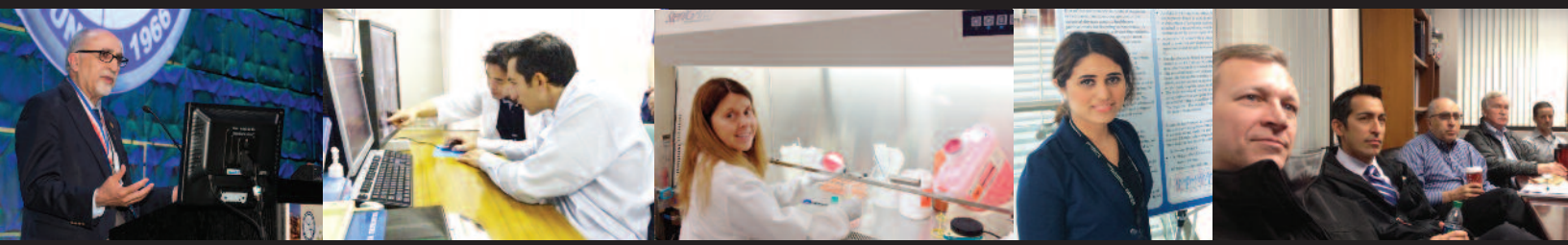


Rishi Kadakia, MD departed from SDSF growing spine-related research to pursue his lifelong goal of medicine. He certainly did not leave empty handed—departing with the values of patient compassion and evidence-based practice. He graduated medical school in 2015 with High Honors and with the experience of serving on the American Medical School Association local board

with the focus on community-based health programs.

He also designed and continues to maintain a student-centered learning platform using his programming knowledge. Rishi completed one year of General Surgery residency at The Mount Sinai Hospital in New York City and is now completing his training in Anesthesiology at Mount Sinai St. Luke's-West. Following his residency, he ultimately hopes to further his training with a fellowship in Critical Care or Cardiac Anesthesiology.

Bo Robertson, BA Psychology started working in spinal deformity research at SDSF in 2013. In 2016, he left SDSF to pursue his Ph.D. in Clinical Health Psychology with a research focus in biological psychology and psychophysiology. Bo is currently a practicum intern in the Department of Psychiatry at the University of California, San Diego where he conducts pre and post-surgical psychological assessments and evaluations for bariatric patients. He is currently in the beginning stages of his dissertation where he plans to study the efficacy of heart rate variability (HRV) as a predictive biomarker for spinal deformity surgical outcomes.



After working as an undergraduate in 2008 with the San Diego Spine Foundation from 2008 to 2012, **Daniel Zhang, MD** went on to attend medical school at the Uniformed Services University in Bethesda, Maryland and graduated in 2016.

Daniel went on to complete an internship in Family Medicine at the Naval Hospital in

Jacksonville, Florida.

At this time, Daniel is attending the Undersea Medical Officer Candidate school in Groton, Connecticut where he is training to serve as a medical officer for the Naval submarine and dive communities.

Jayla Kyaw, BS Biological Sciences is currently pursuing the achievement of a Certified Lean Six Sigma Black Belt and working as a Project Manager (Supply Chain & Finance) at Nanomedical Diagnostics, which is literally right next door to SDSF!

“I've used my extensive experience in biomedical research and medical device knowledge to transition to this position.



The career path that I've chosen has given me an opportunity to encapsulate my background in healthcare and turn it into real life application by planning and managing the production of high volume life science tools and innovative medical technologies. During my free time, I am enjoying doing house projects and planning for the next short trip.”

Jack's Story

First and foremost, thank you for taking the time to read our story! My name is Kim Speegle and I am married to K9 Officer, Darrin Speegle. We are very blessed to have four children: Brilye, John Patrick, Kamden, and Jack. Our youngest son, Jack, came into this world weighing in at 9 pounds, 13 ounces. A big and healthy boy, just like his big brother.



At about three weeks old, he began showing signs of being sick. Through a series of unfortunate events, the doctors were unable to pinpoint the reason for this sickness. After many weeks, our prayers were finally heard and treatment was started for an infection that spread through his bloodstream and into his bones.

His spine, however, did not escape harm. The infection spread to his T7 and T8 vertebrae, which were damaged beyond repair.

Jack was in the hospital over Thanksgiving and it was far from clear if or when he'd come home. With everything as chaotic as it was during this time, we had to care for the well-being of our other children. As a diversion from the harsh reality of Jack's situation, we asked our children what they wanted for Christmas. A very surreal moment occurred when they said all they wanted.... was for Jack to come home. We were so happy to bring him home on Christmas Eve, even though he was in a full body cast and had a feeding tube.

Surviving this sickness left Jack in a very unusual circumstance.



Preoperative views show a significant spinal curve, affecting lung function

It seemed to us the medical community had no ideas on how to treat his spine. We were told to wait and see if the damaged vertebrae would regenerate and grow back. Doctors were consulted for six years from all around the world. Because Jack did everything on time...rolled over (even in a body cast!), talked, and yes, walked on time, it became even more difficult for the medical specialists to determine the best treatment for his spine out of concern that any surgical treatment could lead to paralysis. And yet, Jack's happy attitude and spirit were amazing.

As Jack grew, his damaged spine twisted and turned rather than grow straight and tall. This affected his lung capacity, as there was limited space for his lungs to grow. Jack reached a point where he stopped growing and thriving, all because of the energy needed to breathe. In my heart, I knew we would be facing his death again if we could not correct his spinal problem. We sold our house and started building, for lack of better term, a "handicapped accessible" home with our own hands. All the while we searched and spent every dime we had, trying to find a surgeon who could help us. Every doctor we saw told us they could not do the surgery Jack needed without paralyzing him. In a last-ditch effort, I sent out an urgent email. Again, I asked people pray for us. I included his X-rays and CAT Scans in this email.

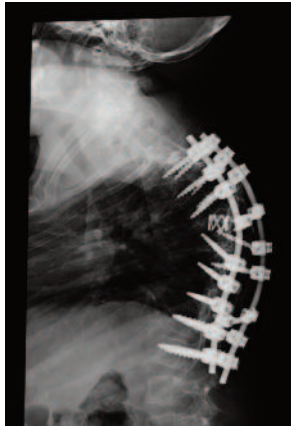
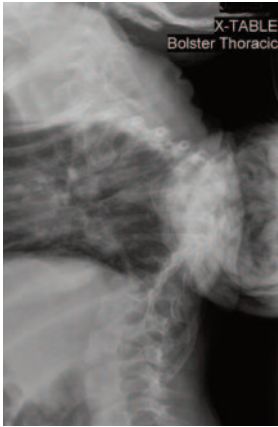
A few days later, I received a call from San Diego, California, from a spinal deformity specialist, Dr. Greg Mundis, Jr., who said he believed he could fix it! At long last, Jack had his first corrective surgery at six years of age. After five weeks in halo traction and his family being two thousand miles away, a rod was placed to improve the twisting curve while trying to leave room for both spinal and lung growth. Jack came out of the surgery capable of walking.

Two years later, the rod worked its way through Jack's skin leading to a return to California for what we hoped was simple rod removal.

Afterwards, instead of his spine staying in its corrected position, Jack's spine collapsed and twisted again. Worse yet, Jack was in tremendous pain. New x-rays revealed a curve of over 180 degrees. The diagnostic term for this is severe Kyphoscoliosis.

A relatively simple operation, had turned into another catastrophic situation. We were all dealing with a child who had survived what most had not, followed by an innovative first surgery that did not last as long as hoped. At that point, we were facing a set of circumstances with limited solutions. Jack's planned four-day trip turned into another 100-day stay in the hospital including five months in halo traction.

The recovery from the second surgery became lengthy and extremely difficult when Jack developed a pressure wound. "This problem would add months to his recovery. Jack was already missing his family and it began to weigh on his emotional well-being. Dr. Mundis and I both agreed that he needed to finish his recovery at home, but how to get him there? We turned to the only thing we knew would work.... prayer. Sure enough, a group of heroes stepped up to arrange the flight home! Angel Flight was contacted and the



Postoperative views show a corrected spine with implants (rods and screws) in place at that time

plan to get him home was underway! Jack literally came home by way of angels! He was picked up at the hospital and delivered to his living room at home under the care of a specialized team!

Amazing!

Two years later, Jack finally recovered from the second surgery followed by physical therapy and rehabilitation. His ability to walk after the second surgery has been extremely difficult and we've had our highs and lows. He is working very hard to walk again. He is now standing on one leg and recently rode an assistive bicycle. Jack is being referred to a paralysis recovery specialist in Pinellas Park, Florida to regain his walking abilities.

Jack is now a happy, positive 10-year-old, despite being in a wheelchair. Despite our grief over what the sickness took from him, Jack doesn't see it that way and he takes his challenges one day at a time. So we try to follow Jack's lead and do the same. He is happy to have his brother and sisters alongside of him. And, over time, Jack's dad and I have pushed through all our hardship and pain. Anyone can survive these extremely difficult situations, but it's so important to do more than get through the devastation. You have to come out on the other side stronger and wiser, knowing you have done all you can. Everyone's story doesn't turn out like mine and trust me, I have seen some really bad outcomes.

It's good to grieve the sickness and the things that have been taken from Jack. But, it's not good to stay there. You have to take what you have and enjoy what's ahead. Jack looks different. Instead of letting that bring us down, we have used his trials to minister to others. I've learned that people will listen to me because of what we've endured. I had to learn that suffering does not come from God, despite what most people believe. Stay away from the blame game, it will only tear you apart. The fact that my son can smile and love life is so much more inspiring, than if it didn't happen. Jack will walk again, I'm sure of it! Even if he never walks again on this earth, he will still be happy. True happiness is what's in your heart, not what you look like or how good of an athlete you are.



SDSF would like to thank Kimberly Speegle for sharing her family's story about Jack's struggles and their ability to rise above all their challenges through love, faith and prayer. Kimberly is a published author. You can find her initial work about Jack titled: "Miracles Don't Happen The Way You Think They Do" (Eleos Press, 2014) on AmazonSmile.com in hard copy and Kindle versions.

Please also visit our website for the full-length version of Jack's Story at www.sandiegospinefoundation.org.



Florence's Story



Florence with her husband Len

Absolutely! That was my answer when Dr. Eastlack's nurse asked if I was interested in telling my story. Mine is not your typical spine story, but, from what I hear, hardly any story is. Like many, my life has been full of ups and downs. It's the ups that sustain me, and for that and those in my life, I'm so grateful.

I was born in New York City and spent my formative years there. I married into a military life and traveled all over, spending a number of years in Germany before returning to the U.S. But, military life can be trying and after a number of years and 2 children, my marriage ended, thus ending a bittersweet chapter in my life. But, when one door closes, as they say, another seemingly opens. I found the man, Leonard, who I would later marry and I'm happy to say we've been married for 30 years now. Thankfully, he's been my rock during our journey forward in life.



Images show degenerative changes on the left and surgical correction and stabilization on the right

I've always been a very organized person, so I guess it's no mistake that I found a great career in healthcare administration. I learned much and worked hard and this eventually paid off, as I attained a position as Director of Operations for a Cancer Research facility in southern California. That was truly a happy time in my life. I continued with this work until I retired early, due to declining health as a result of my doctors' inability to determine why.

As it turns out, this lack of diagnosis persisted for nearly 20 years. There were no answers for me, yet, I was having strange issues with balance, strength, pain, just to name a few. Each test, each trip to another doctor yielded no definitive answer. During this time, my brother was diagnosed with Multiple Sclerosis (M.S.) two weeks before he died. Then, roughly 20 years after the first symptoms emerged, I was told I also had M.S. Hind sight being 20/20, the news came as an "ah-ha" moment. So much made sense, finally! However, this revelation was not happy news. My symptoms included back and leg pain that was progressively worsening over time. Now that we knew I had M.S., we of course attributed all my pain to this.

At that point, I entered into pain management, which included physical therapy. This helped somewhat for 2 years, but no specific treatment helped for long and I became more and more sedentary due to increasing pain in my back and legs. All the while, I very much wanted to be a part of my kids and grandkids lives. I didn't want to be "that" grandma; the one who was so fragile and couldn't play, or participate in activities. Despite my issues, my husband and I decided to move closer to my children and grandchildren, so we moved to the San Diego area after 36 years in Orange County, California. The move was a tremendous thing! I had my family close and this lifted my spirits greatly.

My pain continued to worsen and my husband and I agreed it was time to get more aggressive in finding answers. Why would M.S. be the cause of this? Did it make sense? The search led us to Scripps Clinic Spine Service and Robert K. Eastlack, MD. I was immediately put at ease by Dr. Eastlack's kindness and concern as well as his personality to never give up on me. His studies showed a physical reason for my pain apart from M.S. I had spinal stenosis (narrowing of the channels of the spine causing nerves to be pinched) along with spondylolisthesis (an abnormal slip of one vertebrae on another, leading to wear and tear to the joints of the spine). And, it wasn't caused by my M.S.! He suggested injections and coupled with more physical therapy which did help temporarily, a good sign that if surgery was needed, it would work. Despite those treatments, I was slowly losing my independence around my home due to pain.

Because the nonoperative treatments failed to have any long-lasting benefit, Dr. Eastlack recommended I have surgery. It was good to feel hope that these symptoms that I had long ago attributed to my M.S. could be alleviated.

With the support of my husband and family, I underwent surgery, which included special spacers to provide badly needed height and to help fuse the slipped vertebrae together permanently so they wouldn't move.



Along with that surgery, the nerves in that area were also “decompressed”, so that my spinal nerves would again have freedom of movement to relieve my leg pain. Finally, a posterior spinal fusion with rods and screws were placed in my back to help hold it all together (stabilize it) until the spinal fusion could knit the 2 vertebrae together permanently in the back.

My early recovery was pretty uneventful. I improved and was feeling better each of the first 3 months after surgery. Then, I sensed things starting to reverse and my level of pain was beginning to increase again. Things didn't feel right. Dr. Eastlack's assessment concluded that the necessary bony bridging needed to fuse the bone together wasn't taking in one location. The medications I have to take for my medical conditions made it harder for the bone to heal properly.

He recommended a revision surgery to replace the rods and screws to better stabilize my spine and add additional bone grafting material to improve my chances of healing. I wore a bone growth stimulator for 30 minutes each day, which looks like a small brace and helps to improve fusion. Dr. Eastlack felt my chances were still good (about 85%) that I could still get a successful outcome.

I did everything I was told to do and this time, my recovery was nearly perfect! Early on, my need for pain medication became less and less and after 3-4 weeks following the 2nd surgery, I noticed I was breathing deeper and log rolling with ease. Things became more natural for me. Not long after, I caught myself bending from my knees and eventually stopped using a cane. There is so much that I couldn't do before that I believed was caused by M.S., but happily discovered my abilities returning.

Sure, these abilities may seem simple to a fit 20-year-old, but for me with one foot literally in a wheelchair, I found a new life in my 70's. I'm happy to report that I'm largely independent

in all my activities. M.S. does still limit me some. My balance can be an issue and I've learned not to make sudden movements that could cause me to fall. And, I'm becoming more sedentary over time, but not due to back and leg pain. I'm in my 70s for crying out loud!

Mostly, I'm very pleased to have been released from the constant pain so I can enjoy every minute I can with my husband and family. Not one day goes by that we aren't grateful for where we are now.

Tips for those considering spine surgery: **YOU ARE IN CHARGE OF YOUR TREATMENT**, so don't be afraid to be assertive and be your own advocate! Be positive, even if things don't go to plan.

Get to know your potential surgeon, build a relationship and ask questions. Follow all discharge instructions, such as wearing a bone stimulator after surgery. These will help guide you to the best possible recovery. To be honest, I didn't use the bone stimulator after my first surgery. I felt a burning sensation the few times I used it and rather than call my doctor, I just stopped. Maybe I would have still needed the revision surgery, but I sure would have preferred not to have a second surgery, if given the chance. So, speak up! If there's a problem, call your doctor.

Lastly, pain can take the strongest of individuals down a path of depression, or narcotic medication dependency.

I was there at the precipice of depression myself and I've learned to avoid those paths of negativity and to ask for help when I needed it..... It worked.



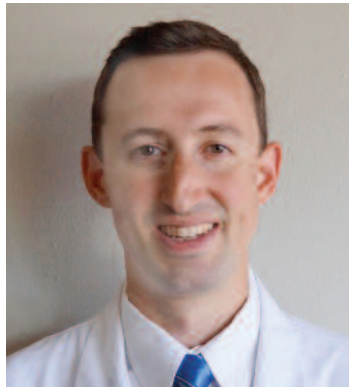
Florence and Len with granddaughter Faith. Enjoying family has been an important part of Florence's recovery

I'm so grateful for New Beginnings, for gaining quality time with Len and my family, time I never thought I'd have again.

San Diego Spine Foundation would like to thank Florence for sharing her story, which we hope will provide guidance and inspiration for those who are in need of help, regardless the problem.

FELLOWSHIP

Graduating Clinical Fellows 2016-2017



Amrit S. Khalsa, MD
*Assistant Professor,
Division of Spine Surgery
Department of Orthopaedic Surgery
Hahnemann University Hospital/
Drexel University College of Medicine
Philadelphia, Pennsylvania*



Justin B. Ledesma, MD
*Staff Physician
Tucson Orthopaedic Institute
Tucson, Arizona*

Current Clinical Fellows 2017-2018



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



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



Randall Hlubek, MD
*PGY-6 Neurosurgery Resident
Barrows Neurological Institute
Phoenix, Arizona*

Future Clinical Fellows 2018-2019



Daniel Thibaudeau, MD
*Seton Hall University
Patterson, New Jersey*



Nicole Record, DO
*Seton Hall University
Patterson, New Jersey*



Stacie Nguyen, MPH
Research Manager



Pooria Hosseini, MD, MSc.
Research Fellow

Publications and Presentations 2016-17

Peer-Reviewed Publications: Adult

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.* 3(3), August 2016

Hamilton DK, Kanter AS, Bolinger BD, **Mundis GM Jr, 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.* 2016 Aug; 25(8): 2605-11

Sciubba DM, Scheer JK, Yurter A, Smith JS, Lafage V, Klineberg E, Gupta M, **Eastlack RK, Mundis GM, Protosaltis TS, Blaskiewicz D, Kim HJ, Koski T, Kebaish K, Shaffrey CI, Bess S, Hart RA, Schwab F, Ames CP, ISSG:** Patients with Spinal Deformity Over the Age of 75: A Retrospective Analysis of Operative Versus Non-Operative Management, *Eur Spine J,* 25(8):2433-41, August 2016

Scheer JK, **Mundis GM, Klineberg E, Hart RA, Deviren V, Burton DC, Protosaltis TS, Gupta M, Rolston JD, Bess S, Shaffrey CI, Schwab F, Lafage V, Smith JS, Ames CP, ISSG:** Recovery Following Adult Spinal Deformity Surgery: The Effect of Complications and Reoperation In 149 Patients With 2-Year Follow-Up, *Eur Spine J,* 25(8):2612-21, August 2016

Than KD, **Nguyen S, Park P, Chou D, La Marca F, Uribe JS, Vogel TD, Nunley PD, Eastlack RK, Anand N, Kanter AS, Mummaneni PV, Mundis GM, ISSG:** What Is the Effect of Open vs Percutaneous Screws on Complications Among Patients Undergoing Lateral Interbody Fusion for Adult Spinal Deformity? *Neurosurgery,* 63 Suppl 1:166, August 2016

Nunley PD, Fessler RG, Park P, Zavatsky JM, **Mundis GM, Uribe JS, Eastlack RK, Nguyen S, Chou D, Wang MY, Anand N, Kanter AS, Shaffrey CI, Mummaneni PV, ISSG:** How Do Case Type, Length of Stay, and Comorbidities Affect Medicare Diagnosis-Related Group Reimbursement for Minimally Invasive Surgery for Deformity? *Neurosurgery,* 63 Suppl 1:210, August 2016

Bakhsheshian J, Scheer JK, Gum JL, Hostin R, Lafage V, Bess S, Protosaltis TS, Burton DC, Keefe MK, Hart RA, **Mundis GM, Shaffrey CI, Schwab F, Smith JS, Ames CP, ISSG:** Impact of Poor Mental Health in Adult Spinal Deformity Patients with Poor Physical Function: A Retrospective Analysis with A 2-Year Follow-Up, *J Neurosurg Spine,* 19:1-9, August 2016

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 PG, Scheer JK, Deviren V, Burton DC, Eastlack R, 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,* 79(3):378-88, September 2016

Hamilton DK, Kong C, Hiratzka J, Contag AG, Ailon T, Line B, Daniels A, Smith JS, Passias P, Protosaltis T, Sciubba D, Burton D, Shaffrey C, Klineberg E, **Mundis GM, Kim HJ, Lafage V, Lafage R, Scheer J, Boachie-Adjei O, Bess S, Hart R:** Patient Satisfaction after Adult Spinal Deformity Surgery Does Not Strongly Correlate with Health-Related Quality of Life Scores, Radiographic Parameters or Occurrence of Complications, *Spine (Phila Pa 1976),* [Epub ahead of print], September 2016.

Theologis AA, **Mundis GM, Nguyen S, Okonkwo DO, Mummaneni PV, Smith JS, Shaffrey CI, Fessler R, Bess S, Schwab F, Diebo BG, Burton D, Hart R, Deviren V, Ames C, ISSG:** Utility of Multilevel Lateral Interbody Fusion of The Thoracolumbar Coronal Curve Apex in Adult Deformity Surgery in Combination with Open Posterior Instrumentation and L5-S1 Interbody Fusion: A Case-Matched Evaluation of 32 Patients, *J Neurosurg Spine,* 21:1-12, October 2016

Rihn JA, Radcliff K, Norvell DC, **Eastlack RK, Phillips FM, Berland D, Sherry N, Freedman M, Vaccaro AR:** Comparative Effectiveness of Treatments for Chronic Low Back Pain: A Multiple Treatment Comparison Analysis, *Clin Spine Surg,* [Epub ahead of print], November 2016

Ferrero E, Vira S, Ames CP, Kebaish K, Obeid I, O'Brien MF, Gupta MC, Boachie-Adjei O, Smith JS, **Mundis GM, Challier V, Protosaltis TS, Schwab FJ, Lafage V, ISSG:** Analysis of An Unexplored Group of Sagittal Deformity Patients: Low Pelvic Tilt Despite Positive Sagittal Malalignment, *Eur Spine J,* 25(11):3568-3576, November 2016

EDUCATE

Soroceanu A, Burton Dc, Oren JB, 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 Volume 41, Number 22, Pp 1718-1723, November 2016*

Goldstein MJ, Bruffey J, Eastlack RK: A New, Minimally-Invasive Technique for Direct Pars Interarticularis Osteosynthesis Using Cortical Screws and Spinous-Process Modular Link, *Spine (Phila PA 1976),* 41(23): E1421-E1424, December 2016

Panchal RR, Kim KD, **Eastlack RK, Lopez J, Clavenna A, Brooks DM, Joshua G:** A Clinical Comparison of Anterior Cervical Plates versus Stand-Alone Intervertebral Fusion Devices for Single-Level Anterior Cervical Discectomy and Fusion Procedures, *World Neurosurg,* [Epub ahead of print], December 2016

Uribe JS, Beckman J, Mummaneni PV, Okonkwo D, Nunley P, Wang MY, Jr GM, Park P, **Eastlack RK**, Anand N, Kanter A, Lamarca F, Fessler R, Shaffrey CI, Lafage V, Chou D, Deviren V, MIS-ISSG: Does MIS Surgery Allow for Shorter Constructs in the Surgical Treatment of Adult Spinal Deformity? *Neurosurgery*, 80(3):489-497, March 2017

Akbarnia BA: Art Is Long, Life Is Short: Lessons Learned in The Life of a Spine Surgeon. *Spine Deformity Journal*: Vol 5, Issue 2. Pps 83-85. March, 2017

Capoor MN, Ruzicka F, Schmitz JE, James GA, Machackova T, Jancalck R, Smrcka M, Lipina R, Ahmed FS, Alamin TF, Anand N, Baird JC, Bhatia N, Demir-Deviren S, **Eastlack RK**, Fisher S, Garfin SR, Gogja JS, Gokaslan ZL, Kuo CC, Lee YP, Mavrommatis K, Michu E, Noskova H, Raz A, Sana J, Shamie AN, Stewart PS, Stonemetz JL, Wang JC, Witham TF, Coscia MF, Birkenmaier C, Fischetti VA, Slaby O: Propionibacterium Acnes Biofilm is Present in Intervertebral Discs of Patients Undergoing Microdiscectomy, *PLoS One*, 12(4):e0174518, April 2017

Witiw CD, Fessler RG, **Nguyen S**, Mummaneni P, Anand N, **Blaskiewicz D**, Uribe J, Wang MY, Kanter AS, Okonkwo D, Park P, Deviren V, **Akbarnia BA**, **Eastlack RK**, Shaffrey C, **Mundis GM**, ISSG: Re-Operation After Long-Segment Fusions for Adult Spinal Deformity: The Impact of Extending the Construct Below the Lumbar Spine. *Neurosurgery*: {Epub Ahead of Print} May 3, 2017

Mundis GM, Turner JD, Kabirian N, **Pawelek J**, **Eastlack RK**, Uribe J, Klineberg E, Bess S, Ames C, Deviren V, **Nguyen S**, Lafage V, **Akbarnia BA**: Anterior Column Realignment Has Similar Results to Pedicle Subtraction Osteotomy in Treating Adults with Sagittal Plane Deformity. *World Neurosurg*. 2017 [Epub Ahead of Print]. May 27, 2017

Mundis GM, Turner JD, Deverin V, Uribe JS, Nunley P, Mummaneni P, Anand N, Park P, Okonkwo DO, Yang My, Bess S, Kanter AS, Fessler R, **Nguyen S**, **Akbarnia BA**, ISSG: A Critical Analysis of Sagittal Plane Deformity Correction with Minimally Invasive Adult Spinal Deformity Surgery: A 2-Year Follow-Up Study. *Spine Deformity J*, 2017, Jul; 5(4): 265-271



Dr. Hosseini presents his award winning and award nominated rescrubbing project at IAMA in May 2017

Eastlack RK, **Mundis GM**, Wang M, Mummaneni PV, Uribe J, Okonkwo D, **Akbarnia BA**, Anand N, Kanter A, Park P, Lafage V, Shaffrey C, Fessler R, Deviren V, ISSG: Is There a Patient Profile That Characterizes a Patient with Adult Spinal Deformity as a Candidate for Minimally Invasive Surgery? *Global Spine Journal* 1-6: DOI: 10.1177/2192568217716151, July 2017

Peer-Reviewed Publications: Pediatric

Polly DW, Ackerman SJ, Schneider K, **Pawelek JB**, **Akbarnia BA**: Cost Analysis of Magnetically Controlled Growing Rods Compared with Traditional Growing Rods for Early-Onset Scoliosis in the U.S.: An Integrated Health Care Delivery System Perspective. *Clinicoeconomics And Outcomes Research* 2016: 8 457-465. September 2016

Hosseini P, **Pawelek JB**, **Mundis GM**, Yaszay B, Ferguson J, Helenius I, Cheung KM, 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 1976p)* 2016 Sep 15;41(18):1456-62, September 2016

Upasani V, Parvaresh K, **Pawelek J**, Miller P, Thompson G, Skaggs D, Emans J, Glotzbecker M, GSSG: Age at Initiation and Deformity Magnitude Influence Complication Rates of Surgical Treatment with Traditional Growing Rods in Early Onset Scoliosis. *Spine Deformity Journal*. 2016 Sep;4(5):344-350

Hosseini P, Nnadi C, Rehak L, Repko M, Grevitt M, Aydinli U, Carl A, **Pawelek J**, Crandall D, **Akbarnia BA**: Analysis of Segmental Mobility Following a Novel Posterior Apical Short-Segment Correction for Adolescent Idiopathic Scoliosis. *Spine Volume 41*, Number 20, Pp E1223-E1229. October 15, 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*, October 2016, (10) Pp 3294-3300

Poe-Kochert C, Shannon C, **Pawelek JB**, Thompson GH, Hardesty CK, Marks CK, Marks DS, **Akbarnia BA**, McCarthy RE, Emans JB: Final Fusion After Growing-Rod Treatment for Early Onset Scoliosis: Is It Really Final? *J Bone Joint Surg Am*, November 2016, 98(22): Pp 1913-1917

Hill G, Nagaraja S, **Akbarnia BA**: **Pawelek J**, Sponseller P, Sturm P, Emans J, Bonangelino P, Cockrum J, Kane W, Dreher M, GSSG: Retrieval and Clinical Analysis of Distraction-Based Dual Growing Rod Constructs for Early Onset Scoliosis. *Spine* {Epub Ahead of Print} April 26, 2017

Hosseini P, **Pawelek JB**, **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? *Eur Spine J.*, June 26, 2017

Kwan Kyh, Alanay A, Yazici M, Demirkiran G, Helenius I, Nnadi C, Ferguson J, **Akbarnia BA**, Cheung JPY, Cheung KMC: Unplanned Reoperations in Magnetically Controlled Growing Rod Surgery for Early Onset Scoliosis with A Minimum of Two-Year Follow-Up. *Spine* [Epub Ahead of Print]. June 27, 2017

Book Chapters

Mundis GM, **Hosseini P**: Anterior Column Release for Adult Lumbar Scoliosis, Chapter 13, in *Adult Lumbar Scoliosis: A Clinical Guide to Diagnosis and Management*, Ed: Eric O. Klineberg (Springer, Cham, Switzerland), 2017

Podium Presentations – Adult

Kim HJ, Diebo BG, Schwab FJ, LaFage V, **Mundis GM**, Shaffrey CI, Smith JS, Hart RA, Burton DC, Bess S, Ames CP, Klineberg EO, ISSG: Factors Associated with Complication-Free Patients in Adult Spinal Deformity Surgery: A Study of 301 Patients with 2-year Follow-up. 51st Annual Meeting of Scoliosis Research Society, Prague, Czech Republic, Sept. 21-24, 2016



Kim HJ, Bao H, Iyer S, Smith JS, Kelly MP, Gupta MC, Albert TJ, Protosaltis TS, **Mundis GM**, Passias PG, Klineberg EO, LaFage V, Ames CP, ISSG: Neurological Complications in Adult Cervical Deformity Surgery. 51st Annual Meeting of Scoliosis Research Society, Prague, Czech Republic, Sept. 21-24, 2016 and North American Spine Society 31st Annual Meeting, Boston, MA, October 26–29, 2016



LaFage R, Line B, Liabaud B, Schwab FJ, Smith JS, Gum JL, Ames CP, Hostin R, **Mundis GM**, Burton DC, Kim HJ, Bess S, Klineberg EO, LaFage V, ISSG: Orientation of the Upper Instrumented Segment Influences Proximal Junctional Disease Following Adult Spinal Deformity (ASD) Surgery. 51st Annual Meeting of Scoliosis Research Society, Prague, Czech Republic, Sept. 21-24, 2016 and North American Spine Society 31st Annual Meeting, Boston, MA, October 26–29, 2016



Than DC, **Nguyen S**, Park P, Chou D, LaMarca F, Uribe JS, Vogel TD, Nunley PD, **Eastlack RK**, Anand Neel, Kanter A, Mummaneni PV, **Mundis GM**, ISSG: What is the Effect of Open vs Percutaneous Screws on Complications Among Patients Undergoing Lateral Interbody Fusion for Adult Spinal Deformity? 51st Annual Meeting of Scoliosis Research Society, Prague, Czech Republic, Sept. 21-24, 2016



Kim HJ, Iyer S, Schwab FJ, Protosaltis TS, Passias PG, Hostin R, **Mundis GM**, Deviren V, Shaffrey CI, Kebaish KM, Smith JS, Bess S, Ames CP, Klineberg EO, ISSG: Rates of Recovery and Outcomes after Neurologic Complications in Adult Spinal Deformity Surgery. 51st Annual Meeting of Scoliosis Research Society, Prague, Czech Republic, Sept. 21-24, 2016 and North American Spine Society 31st Annual Meeting, Boston, MA, October 26–29, 2016



Scheer JK, LaFage R, Liabaud B, Schwab FJ, Smith JS, **Mundis GM**, Hostin R, Shaffrey CI, Ames CP, Burton DC, Kim HJ, Bess S, Gupta MC, LaFage V, ISSG: Under-Correction of Sagittal Deformities Based on Age-Adjusted Alignment Thresholds Leads to Worse HRQOL While Over-Correction Provides No Additional Benefit. 51st Annual Meeting of Scoliosis Research Society, Prague, Czech Republic, Sept. 21-24, 2016



Mundis GM, **Eastlack RK**, Mummaneni PV, Okonkwo DO, **Nguyen S**, Kanter A, Anand N, Park P, Nunley PD, Uribe JS, Zavatsky JM, Chou D, Deviren V, ISSG: Current MIS Techniques Fail to Optimize Spinopelvic Parameters in Patients with High Pelvic Incidence. 51st Annual Meeting of Scoliosis Research Society, Prague, Czech Republic, Sept. 21-24, 2016



Kim HJ, Diebo BG, Iyer S, Kelly MP, Sciubba DM, Schwab FJ, Lafage V, **Mundis GM**, Shaffrey CI, Smith JS, Hart RA, Murton DC, Bess S, Ames CP, Klineberg EO, ISSG: Thromboembolic Disease in Adult Spinal Deformity: Surgery: Incidence and Risk Factors in 737 Patients. North American Spine Society 31st Annual Meeting, Boston, MA, October 26–29, 2016



SDSF Leadership with 2017 Distinguished Visiting Professors. From left: Greg Mundis, Jr., Behrooz Akbarnia, Todd J. Albert, Bob Eastlack, past fellow Jay Turner and Juan Uribe

Cassilly RT, Bess S, Line B, Soroceanu A, Lafage V, Klineberg EO, Ames CP, Burton DC, Gupta MC, **Mundis GM**, Hart RA, Hostin A, Kebaish KM, Kim HJ, Boachie-Adjei O, Schwab FJ, Shaffrey CI, Smith JS, ISSG: Obesity is Associated with Increased Major Surgery Including Implant Failure, Wound Problems and Return to Surgery: A Propensity Score Matched Analysis. North American Spine Society 31st Annual Meeting, Boston, MA, October 26–29, 2016



Liabaud B, Lafage R, Hart RA, Schwab FJ, Smith JS, Kim HJ, Hostin A, 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. North American Spine Society 31st Annual Meeting, Boston, MA, October 26–29, 2016



Elysee J, Lafage R, Line B, Schwab FJ, Smith JS, Obeid I, Hart RA, Gum JL, Ames CP, **Mundis GM**, Albert TJ, Bess S, Gupta MC, Lafage V, ISSG: The Uppermost Instrumented Vertebra Mechanical Loading Correlates with the Magnitude of Proximal Junctional Kyphosis in Adult Spinal Deformity Surgery. North American Spine Society 31st Annual Meeting, Boston, MA, October 26–29, 2016



Buckland AJ, Hart RA, **Mundis GM**, Sciubba DM, Lafage R, Errico TJ, Bess S, Vigdorichik J, Schwarzkopf R, Lafage V, ISSG: Risk of Total Hip Arthroplasty Dislocation after Adult Spinal Deformity Correction. North American Spine Society 31st Annual Meeting, Boston, MA, October 26–29, 2016



Saigal R, **Mundis GM**, **Nguyen S**, **Bagheri A**, **Bagheri R**, **Eastlack RK**: Anterior Column Realignment: A Detailed Analysis of Neurologic Risk and Radiographic Outcomes. North American Spine Society 31st Annual Meeting, Boston, MA, October 26–29, 2016 and 2017 American Academy of Orthopaedic Surgeons Annual Meeting. San Diego, California, March 14-18, 2017



Lafage R, Scheer JK, Liabaud B, Schwab FJ, Smith JS, Passias PG, Hostin A, Ames CP, **Mundis GM**, Burton DC, Kim HJ, Bess S, Klineberg EO, Lafage V, ISSG: The Impact of Radiculopathy on Patients Reported Outcomes: A Propensity Matched Study on 386 Adult Spinal Deformity Patients with and without Leg Pain. North American Spine Society 31st Annual Meeting, Boston, MA, October 26–29, 2016



Kim HJ, Bao H, Iyer S, Smith JS, Gupta MC, Albert TJ, Protopsaltis 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. North American Spine Society 31st Annual Meeting, Boston, MA, October 26–29, 2016



Kim HJ, Bao H, Iyer S, Smith JS, Kelly MP, Gupta MC, Albert TJ, Protopsaltis TS, **Mundis GM**, Passias PG, Neuman BJ, Klineberg EO, Lafage V, Ames CP, ISSG: Cervical Deformity Surgery Does Not Result in Postoperative Dysphagia: A Prospective Cohort Study. North American Spine Society 31st Annual Meeting, Boston, MA, October 26–29, 2016



Smith JS, Shaffrey CI, Kim HJ, Neuman BJ, Klineberg EO, Schwab FJ, Lafage V, Lafage R, Scheer JK, Protopsaltis 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, Podium, North American Spine Society 31st Annual Meeting, Boston, MA, October 26–29, 2016



Lafage R, Gum JL, Liabaud B, Schwab FJ, Smith JS, Ames CP, Hostin A, Shaffrey CI, **Mundis GM**, Burton DC, Hart RA, Bess S, Gupta MC, Lafage V, ISSG: Unfused Thoracic Spine Reciprocal Alignment Changes Following Adult Spinal Deformity (ASD) Surgery Can Be Predicted. North American Spine Society 31st Annual Meeting, Boston, MA, October 26–29, 2016



Chou D, Mummaneni P, Nunley P, Zavatsky J, **Eastlack RK**, Okonkwo D, Wang M, Park P, Uribe J, Anand N, Deviren V, **Akbarnia BA**, **Nguyen S**, **Mundis GM**: Treatment of The Fractional Curve of Adult Scoliosis with Circumferential Minimally Invasive Surgery (cMIS) Versus Traditional, Open Surgery: An Analysis of Surgical Outcomes. Global Spine Congress, Milan, Italy, May 3–6, 2017

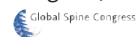


Smith J, Line B, Bess S, Shaffrey C, Kim H, **Mundis GM**, Scheer J, Klineberg E, Hostin R, Gupta M, Daniels A, Kelly M, Gum J, Schwab F, Lafage V, Lafage R, Ailon T, Passias P, Protopsaltis T, Albert T, Daniel Riew K, Hart R, Burton D, Deviren V, Ames C: The Health Impact of Symptomatic Adult Cervical Deformity: Comparison to United States Population Norms and Chronic Disease States Based on the EQ-5D. Global Spine Congress, Milan, Italy, May 3–6, 2017



SCORE Fellows Research Day included research presentations from SDSF Fellows. From left: Behrooz Akbarnia, Bob Eastlack, Amrit Khalsa, Greg Mundis and Justin Ledesma

Smith J, Shaffrey C, Klineberg E, Lafage V, Schwab F, Lafage R, Kim H, Hostin R, **Mundis GM**, Gupta M, Liabaud B, Scheer J, Diebo B, Protopsaltis T, Kelly M: Complication Rates Associated with 3-Column Osteotomy in 82 Adult Spinal Deformity Patients: Retrospective Review of a Prospectively Collected Multicenter Consecutive Series with Minimum 2-Year Follow-Up. Global Spine Congress, Milan, Italy, May 3–6, 2017



Mundis GM, Gerling M, Park P, Mummaneni P, Fu KM, **Nguyen S**, Than K, Nunley P, Okonkwo D, Uribe JS, Fessler RG, Anand N, **Eastlack RK**, ISSG: The Impact of Revision Surgery on Patients Undergoing MIS Correction of Adult Spinal Deformity: A Multi-Center Study. SOLAS Annual Meeting, San Diego, CA, May 18–20, 2017



Kanter A, Park P, **Mundis GM**, Than K, **Nguyen S**, Uribe JS, Nunley P, **Eastlack RK**, Fessler RG, Anand N, La Marca F, Mummaneni P, ISSG: Analysis of Complications with Staged Surgery for Less Invasive Treatment of Adult Spinal Deformity. SOLAS Annual Meeting, San Diego, CA, May 18–20, 2017



Eastlack RK, Fu KM, Nunley P, Kanter A, **Nguyen S**, **Mundis GM**, Park P, La Marca F, Uribe JS, Than K, Okonkwo D, Anand N, Fessler RG, Mummaneni P: Patients Over Age 65 with Postoperative Malalignment Are Not As Disabled As Younger Patients. SOLAS Annual Meeting, San Diego, CA, May 18–20, 2017



Ledesma J, **Eastlack RK**, **Nguyen S**, Park P, Mummaneni P, Chou D, Kanter A, Anand N, Nunley P, La Marca F, Fessler RG, Uribe JS, **Mundis GM**, ISSG: Home vs Rehab: Factors That Influence Disposition after MIS Adult Spinal Deformity Surgery? SOLAS Annual Meeting, San Diego, CA, May 18–20, 2017



Protopsaltis TS, Soroceanu A, Tishelman JC, Buckland AJ, **Mundis GM**, Smith JS, Daniels AH, Lenke LG, Kim JH, Klineberg EO, Ames CP, Hart RA, Bess S, Shaffrey CI, Schwab FJ, Lafage V, ISSG: Should Targets for Adult Spinal Deformity Correction Depend on Pelvic Incidence? International Meeting on Advanced Spine Techniques. Cape Town, South Africa. July 12-15-2017



Lafage R, Schwab FJ, Klineberg EO, Burton DC, Bess S, Kim HJ, Smith JS, Ames CP, Hostin R, Shaffrey CI, **Mundis GM**, Lafage V, ISSG: Risk Factor Analysis for PJK After Adult Spinal Deformity Surgery: A New Simple Scoring System. International Meeting on Advanced Spine Techniques. Cape Town, South Africa. July 12-15-2017



Bess S, Line BG, Lafage V, Lafage R, Ames CP, Burton DC, Hart RA, Hostin R, O'Brien MF, **Mundis GM**, Gupta MC, Kim HJ, Klineberg EO, Kebaish K, Protopsaltis TS, Passias PG, Schwab FJ, Shaffrey CI, Smith JS, ISSG: Use of Prophylactic Techniques to Prevent Proximal Junctional Failure (PJF) Following Adult Spinal Deformity (ASD) Surgery Does Not Prevent PJF, However Prophylaxis Might Reduce Need for Revision Surgery. International Meeting on Advanced Spine Techniques. Cape Town, South Africa. July 12-15-2017



Pannu T, Lafage R, Smith JS, Shaffrey CI, **Mundis GM**, Hostin R, Ames CP, Lenke LG, Gupta MC, Kim HJ, Bess S, Gum JL, Schwab FJ, Lafage V, ISSG: Mechanical Loading of the Upper-most Instrumented Vertebra Normative Values and Impact on Proximal Junctional Kyphosis in Adult Spinal Deformity Surgery. International Meeting on Advanced Spine Techniques. Cape Town, South Africa. July 12-15-2017



Podium Presentations - Pediatric

Yaszay B, Reighard FG, Doan J, **Pawelek JB**, Farnsworth CL, **Mundis GM**, **Akbarnia BA**: Growing Rods Effect on the 3 Planes of Deformity in Early Onset Scoliosis (Case Discussion). 51st Annual Meeting of Scoliosis Research Society, Prague, Czech Republic, Sept. 21-24, 2016



Repko M, Aydinli U, Grevitt M, Zabka M, Nnadi C, **Akbarnia BA**, Carl A, Crandall DG, Seme S, **Hosseini P**: Preservation of Spine Motion in AIS Patients Using an Innovative Limited Apical Fusion Technique. Eurospine 2016. Berlin, Germany. October 5-7, 2016



Carl A, Crandall DG, **Hosseini P**, Nnadi C, Grevitt MP, Repko M, Zabka M, Aydinli U, Seme SJ, **Akbarnia BA**: Preservation of Spine Motion in The Surgical Treatment of AIS Patients Using an Innovative Apical Fusion Technique: A Two-Year Follow-Up Study. North American Spine Society Annual Meeting, Boston, Massachusetts, October 26-29, 2016



Pawelek J, **Akbarnia BA**, **Hosseini P**, **Salari P**, Marks DS, Shah S, Skaggs D, Emans J, Sponseller P, Thompson G, GSSG: Traditional Growing Rod Graduates with Various Diagnoses Have Similar Clinical and Radiographic Outcomes. 10th International Congress on Early Onset Scoliosis, Utrecht, Holland, November 17-18, 2016 and International Meeting on Advanced Spine Techniques. Cape Town, South Africa. July 12-15-2017



Hosseini P, **Akbarnia BA**, Emans J, Sponseller P, **Pawelek J**, **Nguyen S**, Sturm P, GSSG: Construct Levels to Anchored Levels Ratio and Rod Diameter Are Associated with Implant-Related Complications in Traditional Growing Rods. 10th International Congress on Early Onset Scoliosis, Utrecht, Holland, November 17-18, 2016

ICEOS

McClung A, **Mundis G**, **Pawelek J**, **Kabirian N**, Yaszay B, Sanders J, Sponseller P, Boachie-Adjei O, **Akbarnia BA**, Sucato D, GSSG: Vertebral Column Resection: Indications and Utilization in The EOS Population. 10th International Congress on Early Onset Scoliosis, Utrecht, Holland, November 17-18, 2016

ICEOS

Skaggs DL, **Akbarnia BA**, **Pawelek J**, Matsumoto H, St. Hilaire T, Sturm PF, Perez-Grueso FJS, Luhmann SJ, Sponseller PD, Smith JT, White KK, Vitale M, CSSG, GSSG: Magnetically-Controlled Growing Rod Patients Have Better HRQOL Measure Compared to Traditional Growing Rod Patients - A Multicenter Pilot Study. International Meeting on Advanced Spine Techniques. Cape Town, South Africa. July 12-15-2017



Yaszay B, **Nabizadeh N**, Jeffords M, Reighar F, Doan J, Meng, **Pawelek J**, Farnsworth CL, **Mundis GM**, **Akbarnia BA**: Assessment of Spine Growth in Early Onset Scoliosis During Growing Rod Lengthening. 2017 International Meeting on Advanced Spine Techniques. Cape Town, South Africa. July 12-15-2017



Summary of Poster Exhibits – Adult

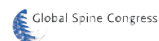
51st Annual Meeting of Scoliosis Research Society, Prague, Czech Republic, Sept. 21-24, 2016 - 7



North American Spine Society 31st Annual Meeting, Boston, MA, October 26-29, 2016 - 10



Global Spine Congress, Milan, Italy, May 3-6, 2017 - 3



Behrooz Akbarnia and Greg Mundis attend the Iranian Orthopaedic Association Annual Meeting in Tehran, Iran in October, 2016

Summary of Poster Exhibits – Pediatric

51st Annual Meeting of Scoliosis Research Society, Prague, Czech Republic, Sept. 21-24, 2016 - 3



2016 Annual Meeting of The Congress of Neurosurgeons, San Diego, California, Sept. 24-28, 2016 - 1



10th International Congress on Early Onset Scoliosis, Utrecht, Holland, November 17-18, 2016 - 1

ICEOS

EPOS / POSNA Annual Meeting. Barcelona, Spain, May 3-6, 2017 - 1

POSNA

Invited Lectures

HARRINGTON LECTURER, 51st Annual Meeting of Scoliosis Research Society, Prague, Czech Republic - **Behrooz A. Akbarnia, MD**

51st Annual Meeting of Scoliosis Research Society, Prague, Czech Republic - **Gregory M. Mundis, Jr., MD**

North American Spine Society 31st Annual Meeting, Boston, Massachusetts - **Gregory M. Mundis, Jr., MD**

International Society of The Advancement of Spine Surgery, San Diego, California - **Gregory M. Mundis, Jr., MD**

Scoliosis Research Society WWC, São Conrado, Brazil - **Gregory M. Mundis, Jr., MD**

Iranian Orthopaedic Association Annual Meeting, Tehran, Iran - **Behrooz A. Akbarnia, MD**

Annual Spinal Deformity Symposium, Mexico City, Mexico - **Behrooz A. Akbarnia, MD**

The Emans Spine Symposium 2016. Boston, Massachusetts - **Behrooz A. Akbarnia, MD**

Shriners Hospital, Temple University, Philadelphia, Pennsylvania - **Behrooz A. Akbarnia, MD**

Texas Children's Hospital, Houston, Texas - **Behrooz A. Akbarnia, MD**

Texas Scottish Rite Hospital, Dallas, Texas -
Behrooz A. Akbarnia, MD

Pediatric Spinal Deformity: On the Cutting Edge VI. Coral Gables,
Florida - **Behrooz A. Akbarnia, MD**

Iranian American Medical Association 24th Annual Medical
Conference. San Diego, California - **Behrooz A. Akbarnia, MD**

NSpine Main Conference 2017. London, United Kingdom - **Behrooz
A. Akbarnia, MD**

International Phillip Zorab Symposium 2017. London, United
Kingdom - **Behrooz A. Akbarnia, MD**

San Diego Spine Foundation Annual Visiting Professorship Meeting.
La Jolla, California - **Behrooz A. Akbarnia, MD, Ramin Bagheri, MD,
Maneesh Bawa, MD, Donald Blaskiewicz, MD, James D. Bruffey,
MD, Robert K. Eastlack, MD, Gregory M. Mundis, Jr., MD**

XII Congresso Catarinense de Ortopedia e Traumatologia, Joinville,
SC, Brazil - **Gregory M. Mundis, Jr., MD**

2nd Annual International Spinal Deformity Symposium (ISDS),
Chicago, Illinois - **Gregory M. Mundis, Jr., MD**

University of California, Davis And Shrine of Northern California,
Sacramento, California - **Gregory M. Mundis, Jr., MD**

Spine: Base to Summit, Beaver Creek, Colorado - **Gregory M.
Mundis, Jr., MD**

2nd Principles and Techniques of Complex Spinal Reconstruction,
New York, New York - **Gregory M. Mundis, Jr., MD**

University of Missouri, Columbia, Missouri - **Gregory M. Mundis, Jr., MD**



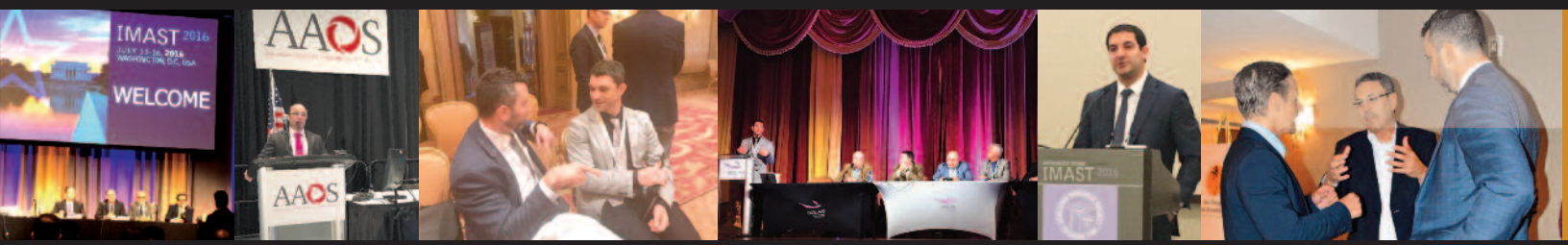
Greg Mundis presents at podium during the 2016 Scoliosis Research Society Annual Meeting in Prague, Czech Republic

The 14th Annual Cabo Meeting: State of Spine Surgery Think Tank,
Los Cabos, Mexico - **Gregory M. Mundis, Jr., MD**

2017 Pediatric Deformity Residents and Fellows Course, San Diego,
California - **Gregory M. Mundis, Jr., MD**

6th Annual UCSF Techniques in Complex Spine Surgery Course, Las
Vegas, Nevada - **Robert K. Eastlack, MD**

Christus Muguerza Hospital Alta Especialidad, Monterrey, NJ,
Mexico - **Pat Kostial, RN, BSN**



Invited Lectures Sites 2016-2017





*Past and present fellows and faculty at 2017 SOLAS Annual Meeting
From bottom left, Daniel Acacio, Greg Mundis, Luiz Pimenta, Behrooz Akbarnia, Rodrigo Amaral, Eddie Nomoto,
Justin Ledesma, Bob Eastlack, Pooria Hosseini, Ravi Srinivas, Ali Bagheri, Maneesh Bawa, Jay Turner, Paul Stanton and Don Blaskiewicz*

Supporting the San Diego Spine Foundaton

How can you support the San Diego Spine Foundation? SDSF has established an Endowment Fund for those who wish to contribute to support the foundation's research, education and outreach efforts for years to come. SDSF also accepts donations for current use to cover operating expenses.

For credit/Debit card donations: <http://www.sandiegospinefoundation.org/donate/>

Checks can be mailed and payable to:

San Diego Spine Foundation
6190 Cornerstone Ct.; Ste. 212
San Diego, CA 92121

For Credit Card or Check: Please indicate either
ENDOWMENT or ANNUAL OPERATIONS in the
memo.



2016-17 SDSF Clinical Fellow Amrit Khalsa with past fellow Dr. Nomoto and Monterrey surgeon Dr. Enrique Mendez in Monterrey, Mexico, March 2017

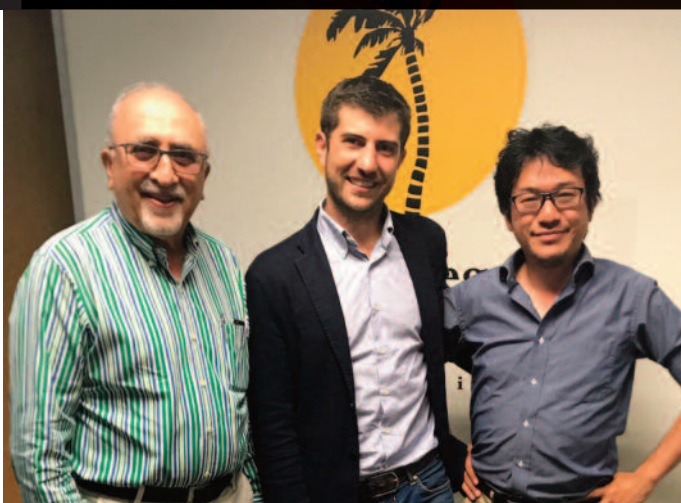


SDSF team works with Christus Muguerza Hospital surgeons and nursing staff



International guests visit SDSF team at Scripps Green Hospital. From left: Dr.'s Karimov and Azamov of Uzbekistan with Dr.'s Akbarnia, Mundis and Bagheri

INTERNATIONAL



Behrooz Akbarnia with 2017 International Visiting Fellows Antonio Scarale from Rizzoli Institute, Bologna Italy, and, Tetsuro Hida from Nagoya University, Nagoya Japan



International surgeon visitor Dr. Rabi Dhakal of Nepal with Dr.'s Mundis and Khalsa in December 2016. Dr. Mundis plans to visit Nepal in 2017

New Traditions - 2016 Gala

Saturday, December 3rd, 2016 marked the first ever combined fundraiser by SDSF and GSO (Global Spine Outreach). The Gala was held at the Hilton La Jolla Torrey Pines Hotel and featured live entertainment including singer Krista Richards, musicians The Moves Collection, a Photography Display by Sarah Larson, and live painter Elliott From of Art Beat Live from Chicago. Our MC was Meteorologist Angela Campos from San Diego Channel 10. In addition, a live auction and fundraising helped SDSF and GSO work towards its goal of raising funds to develop a new database to track and study outreach patients around the globe.



Leila Shargi is joined by her husband Parvis Mesbahzadeh and their daughter Yassi



SDSF President and Founder Behrooz Akbarnia enjoys the moment with SDSF Board Member, Greg Mundis, Jr.



Tony Rinella and GSO Executive Director Bridget Mortell with Greg Mundis, Jr., his son Greyson and niece Reiley Martin



Tony Rinella, GSO President with SDSF past Fellow, Michael Flippin



Chicago artist/entertainer Elliott From wowed the Gala audience with 2 live paintings which were later auctioned during the evening event



SDSF and GSO mission team. From left, Alissa Carnelian, Pat Kostial, Behrooz Akbarnia, Lesley Mundis, Greg Mundis, Jr., Bridget Mortell, Tony Rinella and Ed Quinn

2016 SDSF ANNUAL DONORS

The success of our 2016 Gala can be credited on many levels. From the selfless time spent by SDSF and GSO staff and volunteers to create a beautiful venue and successful event, to our Live auction donors, to our table sponsors and gala guests, many of whom bid on auction items and donated to our Fund the Need project to help fund our future outreach database. And, thank you to all our Annual Donors and Sponsors. We can't fulfill our mission without your generous support. Thank you all for your help and generosity!

Gala Live Auction Package Donors:

Vickie and Stephen Beuerle of San Diego, California
Grand Colonial Hotel, La Jolla, California
Hilton La Jolla Torrey Pines Hotel, La Jolla, California
La Jolla Laser Clinic, La Jolla, California
L'Auberge Hotel – Del Mar, California
Memories in Portrait, La Jolla, California
Jonathon Smart, Riviera Partners Realty, Punta Mita, Mexico on behalf of the Rinella Family

Mohammad Abtahi
Sarah E. Aghassi
Behrooz A. Akbarnia
Ladan Akbarnia
Todd J. Albert
Marilyn Alm
Alphatec Spine
Robert Anderson
Kaveh Bagheri
Ramin Bagheri
Bethann Barry Valine
Maneesh Bawa
Matthew Bell
Sigurd Berven
Stephen Beuerle
Bioventus
Donald J. Blaskiewicz
John Block
Debra Boblitt
Ricardo Bravo
James D. Bruffey
Alissa Carnelian
Centinel Spine
CeraPedics
Bryan Cornwall
Deeanne Cornwall
DePuy Synthes
Stephanie Devreker
Karen Dixon
Warren Dixon
Robert K. Eastlack
Shaw Eslamian
Joe H. Fitzgerald
Mary Anne Fitzgerald
Michael Flippin
Yousef Ghandour
Globus Medical
Bill Goode
Cynthia Goode
Jonathan Grandusky
Terry Hanisko
Robert Hasson

Mahin Heravi
Pooria Hosseini
Kelli Howell
Javad Jamshidi
Nosrat Javidan
Pooya Javidan
Yashar Javidan
K2M
Michael Kostial
Pat Kostial
Justin Ledesma
Emily Levy
Micah Logan
Ryan Logan
Greg Lucier
Fereshteh Mahdavi
Mahmood Mahdavi
Global Spine Outreach
Carl Maguire
Hamid Mani
Nasrin Mani
Parvin Mani
Jessica Martin
Ed Mayadag
Medtronic
Hooman Melamed
Clement Miner
Kiumar Mostofi
Darush Mohyi
Gregory M. Mundis, Jr.
Gregory Mundis, Sr.
Lesley Mundis
Sandra Mundis
Scott Musicant
Coleen Nay
Edward Nomoto
Nuvasive
Orion Spine
OrthoFix
Nasrin Owsia Akbarnia
James Pathman / Data Resolution
Jeff Pawelek

Edward Quinn
Baroukh Radfar
Gavin Renkley
Bo Robertson
Jeremy Rosenberg
Hossein Samadi
Ghodrat Sarrafi
Robert Sbardellati
Sam Schroerlucke
SeaSpine
Majid Shahbaz
Leila Sharghi
Roohollah Sharifi
Virginia Sheller
Si-Bone
Marie Simmons
Spinal Elements
SpineWave
Stryker Spine
Robert Sutherland
Shawn Tate
Neil Tayyab
Titan Spine
Team Hoyt – San Diego
Patricia Tullius Wickstrom
Wes Wickstrom
Steven Vizmeg
Kevin Yoo
Zimmer Biomet



Giving to benefit others in need is an action of love for one another. We hope you'll support our mission!

SUPPORTING THE FOUNDATION



As Executive Director of SDSF, I'm so blessed to work with some of the best and brightest minds in the field of spine and spine deformity surgery. Our team continues to wow me, both academically and through their selfless outreach efforts.

This year's Annual Report provides an excellent summary of our faculty and staff accomplishments. But, I also want to thank them for being some of the nicest people on the planet. And, I'm so blessed to get to work with these incredible folks every day!

I hope you'll consider supporting our efforts? Just visit www.sandiegospinefoundation.org to help us continue our mission of research, education and outreach for years to come. Thank you all and have a wonderful 2018!



James S. Harrop, MD, FACS
Professor of Neurological Surgery
Professor of Orthopaedic Surgery
Department of Neurosurgery
Jefferson Medical College
Philadelphia, Pennsylvania

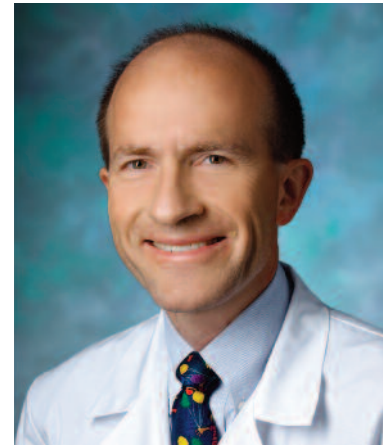
SAVE THE DATE!

2018 SAN DIEGO VISITING PROFESSORSHIP
FRIDAY, JULY 27, 2018

Hilton La Jolla Torrey Pines Hotel

Co-Chairs:

Robert K. Eastlack, MD (Scripps Clinic) and
Peter O. Newton, MD (Rady Children's Hospital; San Diego)



Paul D. Sponseller, M.D., MBA, FAOA
Sponseller Endowed Professor
of Pediatric Orthopaedics
Head, Division of Pediatric Orthopaedics
The Johns Hopkins Hospital
Baltimore Maryland
Vice President - Scoliosis Research Society



Brian Greer

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. Brian, you are one in a million!



Jennifer Rushall

Thanks to Jennifer Rushall for volunteering her time to photograph our 2017 Annual Visiting Professorship. Jennifer, thank you for always being there!

About the Cover

The cover is provided as a courtesy of Anne Cotrel and the Cotrel Foundation. The cover art is a gray-scale rendition of SDSF 2016 Annual Report cover and is another 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 Supérieure 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
www.sandiegospinefoundation.org

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