

Connections 2018

A Newsletter from the Children's Orthopedic and Scoliosis Training Program • Issue 14 – 2018

Message from the Director

It is quite an honor to follow one of my mentors and one of the great educators in the history of Pediatrics Orthopedics as Director of the Orthopedic Training Program. Kind of like being the coach who succeeded John Wooden (Anyone remember his name?). Dennis Wenger has not retired (not even close), but he has graciously passed on the responsibility (and the paperwork!) to me. I am humbled to follow David Sutherland and Dr. Wenger in this role.

We had a great fellowship class this year with all four of them going to great academic jobs. Josh Holt is returning to the University of Iowa, Julia Sanders is returning to the Colorado Children's Hospital, Craig Louer is joining the faculty at Chapel Hill, and Carter Clement is returning to his home town of New

Orleans at LSU. They all continued in the proud tradition of our former fellows with hard work and great research. We wish them the best in their new careers and welcome them to our Rady Pediatric Orthopedic Surgery Family.

We look forward to our new fellowship class which will start on August 1st. Peter Hahn is joining us from UC Irvine, Jonathan Koenig is from Lennox Hill Hospital, Ronald Ruiz from Cedar Sinai in Los Angeles, and Ernest Young from Mayo.

Our relationship with UCSD, Balboa Naval Hospital, and the new combined Air Force and Army Program (San Antonio Military Medical Center) remains strong. UCSD sends us PGY-5 and PGY-3 residents, Balboa sends us a PGY-2 resident, and

the San Antonio program sends us PGY-3 residents. We are proud to be part of their training programs. All of them had average OITE scores above the 90th percentile which is quite impressive.

We were very fortunate to have Mr. Haemish Crawford from Auckland, New Zealand as our visiting professor. His experience, wit and joie de vivre was evident from his first talk of the day. The interaction with the trainees and the faculty made for a fantastic experience for all involved.

We are pleased to have Trang Pham as our new education coordinator. Ms. Pham joined us from the University of San Diego where she worked with the law school. Always organized and a joy to work with we are very fortunate to have her on the



Mubarak



Wenger



Chambers



Newton



Wallace



Pring



Yaszay



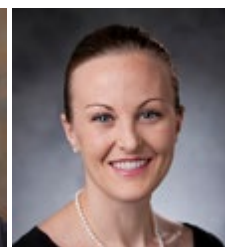
Edmonds



Pennock



Upasani



Rickert

Message from the Director – cont'd

team. Many of you met her at the reception in Austin for POSNA. Please stay in touch with her throughout the year.

Our practice continues to expand with the addition of Dr. Kathleen Rickert. Dr. Rickert trained at Duke and did a fellowship with us last year. She specializes in trauma and lower extremity deformity. We are also expanding to other sites around San Diego and Riverside County, with our older office in Escondido, new office in Oceanside, and newest office in Murrieta.

There have been some important changes in our UCSD Training Program. Dr. Steve Garfin who has been Chair of the Orthopedic Surgery Program for the past few decades was promoted to the Dean of the UCSD School of Medicine. His new role is to place an emphasis on clinical care. We're proud to be a leader in great clinical care and will assist him in any way we can. Dr. Reid Abrams (Peds

Ortho Fellowship Class of 1988) has assumed the role as the new Chairman of the Orthopedic Surgery Department. We wish them both the best of luck.

We all look forward to our new academic year. We have many new initiatives in Spine Surgery, Sports, Cerebral Palsy, and Trauma. We were fortunate to receive several grants this year. More about that in the future.

Thank you for your interest in Rady Children's Hospital Pediatric Orthopedic Surgery Program. I look forward to future encounters with all of you and thank you all for your support of our program.

Hank G. Chambers, MD
Director – Orthopedic Training Program
June 25, 2018



Top 10 Again!



We are proud to report that the U.S. News and World Report has once again placed the orthopedic division of Rady Children's Hospital among the top ten orthopedic programs in the United States. In fact, Rady Children's Hospital ranked in the top ten for all ten specialties surveyed by U.S. News and World Report.

This recognition confirms the results of our concerted effort to create a balanced program that is focused on patient care and surgery quality as well as teaching and research. This has required prolonged and persistent energy and effort from all orthopedic team members.

We also recognize and credit our RCHSD administrative leaders, the leaders of our medical practice foundation, our nursing service, and our incredibly efficient anesthesia department. Thanks to all.

New Education Coordinator

Education Coordinator

Trang Pham, MA

Trang is the Education Coordinator for the Orthopedic Division at Rady Children's Specialists of San Diego providing administrative support and coordination for our educational programs including the fellowship training program, resident program, medical student and international visitors, and academic functions/events. Prior to joining RCHSD, Trang worked as a Program Coordinator with the University of San Diego School of Law where she was responsible for advancing the vision, reputation, and goals of the law school through event planning.

Trang holds a Bachelor of Science Degree in Criminal Justice from University of Phoenix and a Masters of Arts in Leadership Studies from University of San Diego.



Trang being introduced by Dr. Newton at the Fellowship Reunion in Austin, TX.

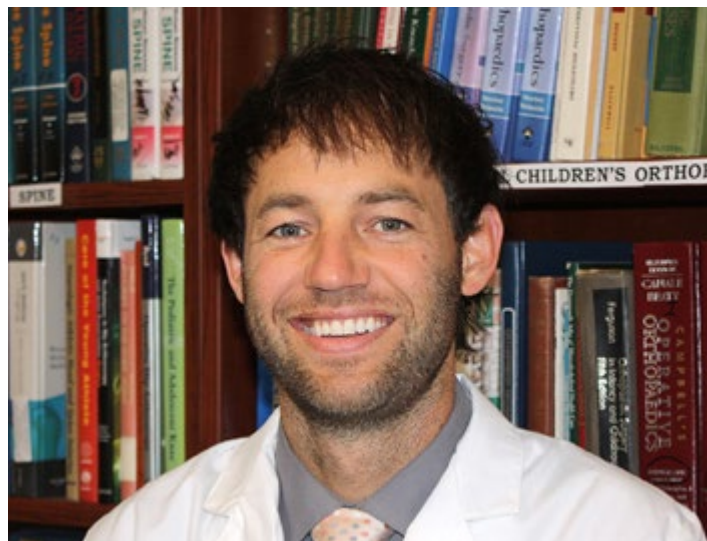
2017-2018 Fellows – Rady Children’s Hospital

The RCHSD/UCSD fellowship program in children’s orthopedics and scoliosis surgery remains among the most sought after in North America. The balance of training that our fellows receive covers all areas of children’s orthopedics as well as providing excellent research possibilities. In addition, we arrange for our fellows to be responsible for primary call several nights each month, under the supervision of a senior staff mentor, which allows them to develop independent decision-making skills. National analysis of surgical training in North America suggests that more graded responsibility needs to be given to senior trainees which is what you can expect from this program. We are proud of our fellows who are graduating this year and we congratulate them on their accomplishments.



Rutledge “Carter” Clement, MD

Dr. Clement graduated from medical school at the University of Pennsylvania and completed his residency at the University of North Carolina. While in San Diego his research focused on a number of spine projects including an in depth look at graduates of growth-sparing instrumentation in early onset scoliosis patients, as well as the effects of posterior instrumentation on adjacent disc kinematics in the thoracic spine. Following his fellowship, Dr. Clement will move to Louisiana where he has accepted a position at Children’s Hospital of New Orleans.



Joshua Holt, MD

Dr. Holt graduated from medical school at the University of North Carolina at Chapel Hill and completed his residency at the University of Iowa where he worked with former fellow Ryan Ilgenfritz (class of 2011). While in San Diego his research included various studies of MRI findings in the elbows and shoulders of childhood baseball players. Following his fellowship, Dr. Holt will move to back to Iowa where he has accepted a position with University of Iowa Hospitals and Clinics.



Children’s Hospital of New Orleans



University of Iowa Hospitals and Clinics

2017-2018 Fellows – Rady Children’s Hospital



Craig Louer, MD

Dr. Louer graduated from medical school at Duke University School of Medicine and completed his residency at Washington University in St. Louis. While in San Diego his research included the association between asymmetric thigh folds and DDH, physical stress reactions and their effects on growth, and unilateral vs bilateral pelvic surgery in neuromuscular conditions. Following his fellowship, Dr. Louer will move to Chapel Hill, NC where he has accepted a position at the University of North Carolina.



Julia Sanders, MD

Dr. Sanders graduated from medical school at Miami Miller School of Medicine and completed her residency at the University of Colorado where she worked with two of our former fellows, Jay Albright (class of 2004) and Andrew Pytiak (class of 2015). While in San Diego she studied the differences in outcomes between operative and non-operative treatment methods for Type IIA supracondylar fractures and also examined fixation methods of medial epicondyle fractures. Following her fellowship, Dr. Sanders will return to Colorado where she has accepted a position at the Children’s Hospital of Colorado in Aurora.



University of North Carolina



Children’s Hospital of Colorado

2017-2018 International Fellows

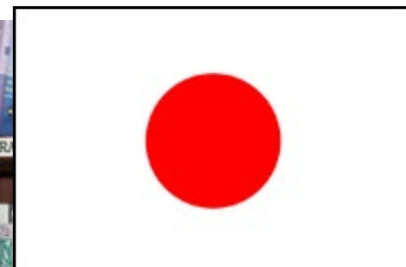
International Fellows

Our orthopedic education program continues to educate international fellows who come from throughout the world to study modern treatment methods for scoliosis, hip disorders, cerebral palsy, and other children's orthopedic conditions. This year's trainees include:



Daegyul Kwon, MD

South Korea
Inha University Hospital
September 1, 2017 through August 30, 2018



Masayuki Ohashi, MD

Japan
Niigata University
Medical & Dental Hospital
January 1, 2018 through December 31, 2018



Kaiying Shen and his wife Lily. Guest professor ceremony at Wuhan Union Hospital.

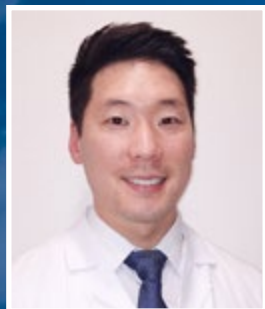


Kaiying Shen, MD

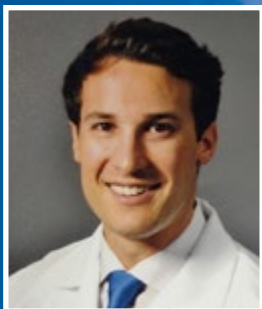
China
Shanghai Children's Medical Center,
Shanghai Jiaotong University School of Medicine
May 31, 2017 through October 31, 2017

Arriving Fellows – 2018-2019

The process of applying, interviewing, and being accepted to one of the top-ranked fellowship programs in children's orthopedics is a demanding process. Each year we receive 40-50 applications and narrow these down to a smaller group that we can interview and then select the very best of these candidates. The surgeons listed below will arrive August 1, 2018 to begin their academic year. They are outstanding young orthopedic surgeons from throughout North America and we look forward to working with them.



Peter Hahn, MD
University of California, Irvine



Jonathan Koenig, MD
Lenox Hill Hospital



Ronald Roiz, MD, CO
Cedars Sinai Medical Center



Ernest Young, MD
Mayo Clinic

Peter Hahn, MD

Undergrad: Bachelor of Science in Neuroscience, University of California, Los Angeles

Medical School: University of California, Irvine

Residency: University of California, Irvine

Jonathan Koenig, MD

Undergrad: Bachelor of Arts in Arts – History of Science/Medicine, Yale University

Medical School: Albert Einstein College of Medicine

Residency: Lenox Hill Hospital, New York City

Ronald Roiz, MD, CO

Undergrad: Bachelor of Science in Cybernetics, University of California, Los Angeles

Medical School: University of Illinois, Chicago

Residency: Cedars Sinai Medical Center, Los Angeles

Ernest Young, MD

Undergrad: Bachelor of Science in Engineering, University of California, Berkeley

Medical School: Case Western Reserve University

Residency: Mayo Clinic, Rochester

Future Fellows – 2018 Match (for 2019-2020 Academic Year)

We are happy to announce that we have matched with the outstanding residents listed below

Jessica Burns, MD, MPH

Banner University Medical Center, Phoenix

Hakan Pehlivan, MD

University of Virginia

Clarabelle DeVries, MD

Washington University at St. Louis

Megan Severson, MD

University of Alabama, Birmingham

Leadership/Accolades

New SRS President:



Peter Newton, MD

Our chairman, Peter Newton, will assume the role of President of the Scoliosis Research Society, in Bologna, Italy in October this year. As you know, he is a former President of the Pediatric Orthopedic Surgeons of North America (POSNA). He continues to lead our group as we expand to new areas around Southern California.

Dr. Firoz Miyanji (former fellow, class of 2006), from Vancouver, will be the Program Chair for the SRS meeting in Bologna later this year. We are very proud of our former fellows who have stepped into leadership roles.

New POSNA Presidency:



Steven Frick, MD

The baton of the POSNA presidency has been passed from Richard Schwend to our former fellow Steve Frick (class of 1998). Dr. Frick is the Chief of Pediatric Orthopedic Surgery at Stanford University and will take over the helm at the 2018 POSNA annual meeting. We look forward to an exciting year as he makes his vision of “significance $p < 0.005$ ” come to life.

Another former fellow, Bob Cho (class of 2010), currently the Chief of Staff of the Los Angeles Shrine, was recently elected to the junior Member-at-Large for the Board of Directors of POSNA.



Dr. Edmonds, Dr. Rickert, and JD Bomar with the AAOS Orthopedic Video Theater award. Co-authors not pictured are: Morgan Dennis, Amanda Davis-Juarez, and Dr. Pennock.

AAOS Orthopedic Video Theater

Although we have produced many videos over the years for purposes of education (both local trainees, patients/families, as well as supporting POSNAcademy and other video venues), we had never submitted a video to the AAOS Annual meeting as part of the Orthopedic Video Theatre (formerly known as the AAOS Multimedia Education Center). This venue is a showcase for the AAOS to provide attendees to the annual meeting access to peer-reviewed videos that utilize this platform to deliver either research or innovative techniques outside the traditional podium or poster platforms. We decided to submit a video this past year entitled, *Surgical Treatment of Pediatric Ankle Instability: Outcomes of a Modified Brostrom Procedure*. And in our first attempt, received the award for Best Pediatric Orthopedics Video at the annual meeting. Although the research was good and the effort was commendable, the ability to win this award on our first try is truly a testimony to co-author JD Bomar and his ability to make our entire audio-visual world come alive. From educational videos to Visiting Professor day to the Spine Tutorial – without him we could not make it all happen. Congratulations to everyone involved.

Leadership/Accolades

Life Without Limits Lifetime Achievement Award

Henry G. Chambers, MD

In November 2017, Hank Chambers was awarded a Life Time Achievement Award from United Cerebral Palsy. The Life Without Limits Award is awarded annually to those individuals who have contributed to the advancement of disability issues in San Diego and Southern California. He shared the award with Ron Roberts, who is the on the San Diego County Board of Supervisors. Mr. Roberts has been a fixture in politics in San Diego and was instrumental in funding programs for children who were orphaned and/or homeless.

Dr. Chambers received the Daniel D. Alessio Award for Excellence. Mr. Alessio was a former President of the San Diego United Cerebral Palsy Organization and the father of a child with a disability. He unfortunately passed away unexpectedly at a very young age, but left a huge mark on the community in San Diego.

Hank was introduced by Dr. Peter Newton and one of our patients who is now an adult. She regaled the audience with her lifetime experience at Rady Children's Hospital and shared her appreciation of the care that she received by Dr. Chambers and the entire Orthopedic Surgery Department.

Dr. Chambers was incredibly touched by the number of friends, colleagues from Rady Children's Hospital, and by the appearance of Dr. Kaye Wilkins who was his teacher and mentor from San Antonio.



Dr. Newton introducing Dr. Chambers



Dr. Chambers giving his acceptance speech after received the Life Without Limits Lifetime Achievement Award



Hank Chambers and Team Rady at the event.

Keeping Pediatric Orthopedic Surgeons Healthy

POSNA Well Being Committee

Jennifer Weiss, MD was tasked by the POSNA board to put together a panel of “experts” at the annual meeting to shed light on the difficult issues facing our members on a daily basis. Problems such as physician burnout, sexual harassment and discrimination, physician depression and suicide, as well as possible solutions and ways to increase our performance were included in this afternoon breakout session. Hank Chambers and Dr. Mike Goldberg (a former POSNA president and world’s expert in physician well being) were asked to help organize this session.

At a well-attended session at POSNA, many of these issues were discussed and dissected. A survey through the POSNA meeting app (with a >75 % response rate) validated the need for our full energy as 40% of our pediatric orthopedic colleagues at the Austin meeting reported that they were “burned out”. We all know that there are multiple causes for this, but we have to come together as a profession to help all of us. The speakers were excellent and the discussion was equally so. The POSNA Board was so impressed that they have developed a Well Being Committee (this evolved from the Wellness

Task Force with it’s unfortunate acronym). Under the direction of Vish Talwaker from Kentucky, we are hoping to increase the awareness of this problem throughout the year via newsletters and social media

Brian Scannell (Class of 2013), the Program Director for the POSNA meeting in Charlotte next year will have part of the One Day Course devoted to this subject. He has lined up some experts and wonderful speakers. I hope that you will be able to attend and I’m sure that he would love to hear suggestions or stories that you would like to share. For those of you still on Facebook, we have a great page entitled POSNA Physician Wellness Group. I urge you to join and share your stories. One of the biggest stressors is the so-called “second victim syndrome”, which can result from being sued or having a poor surgical outcome. We’ve all been there and it’s great to have a supportive group with which to share your feelings and solutions. I hope that you will all join us on this journey.



Photo from the POSNA Wellness Group Facebook page

New Orthopedic Staff

New Orthopedic Staff Member

Kathleen D. Rickert, MD



We welcome our newest orthopedic staff member, Dr. Kathleen “Katie” Rickert, who joined us in August of this past year. She elected to stay after completing the San Diego Pediatric Orthopaedic and Scoliosis fellowship the preceding month. Dr. Rickert was born here in San Diego, but grew up in Tucson, AZ. She went to the University of Arizona for medical school and Duke for orthopedic residency. Interestingly, while in medical school, Dr. Rickert completed a four-week sub-internship here at RCHSD and became acquainted with the ortho staff long prior to her fellowship (so perhaps we could consider her to be almost seven years a veteran of our team). In residency, Dr. Rickert completed research on cartilage and growth modulation. In her fellowship, she completed biomechanical and trauma studies; and was even the first author on the AAOS Award winning video on modified Brostrom procedures discussed within this Connections edition.

Even though she was hired to augment our neuromuscular and limb deformity services, Dr. Rickert has developed a special interest in cystinosis and its relation to orthopedic pathology. She has already become a member of the Cystinosis Research Foundation. Her primary clinical focus these first 9 months has been hot and cold trauma and lower extremity deformity. However, she has spent a lot of time with our CP maestro (Dr. Chambers) in the operating room. They have begun tag-teaming the big hip and lower extremity cases, so that she can hone her skills and develop her neuromuscular practice. Moreover, she has helped bring a surgeon presence to our Oceanside office, providing outreach to the patients in that area who have difficulty getting down to the San Diego office.

She remains active in research and is an Assistant Clinical Professor of Orthopedic Surgery through UCSD. She is actively taking the role of mentor for a UCSD medical student helping him with his Independent Study Project. She has also participated in first-authoring one of the new joint offerings from POSNA and the Journal of Pediatric Orthopedics, the “What’s New in Pediatric Orthopedic” series. Her publication will highlight the new research on lower extremity trauma in children’s orthopedics (due to publish in the near future) and will be followed by the twin publication on upper extremity trauma. We have even started to incorporate her into the teaching schedule, working with residents in clinic and the operating room. No doubt she will continue to bloom where she’s now planted, and we should see another star come out of the San Diego program.



Dr. Rickert with Dr. Robert Mak, an RCHSD nephrologist at a Cystinosis Research Foundation event in Newport Beach.



Dr. Rickert enjoys horseback riding on her time off.

Research Team Year in Review

Written by Tracey Bastrom, MA

We had a wonderful turnout at our annual reunion during the POS-NA meeting in Austin last month. It was great to see those of you that made it out to Lambert's. Not only did we have a great turnout of past fellows, but we also had at least 5 recent/current UCSD research residents in attendance. It's exciting to see all of the interest in pediatric orthopedics from our local residency program.

Our fellows are nearing the end of their year with us and they were all fantastic to work with. Two of the projects were not the traditional retrospective design that is usually favored for the ability to accomplish the study in 1 year. Josh Holt, MD worked with Dr. Pennock to re-contact the cohort of baseball players we studied 3 years ago to evaluate the impact of the baseball season on elbow MRI findings. Julia Sanders, MD worked with our trauma team to implement a long term prospective study of supracondylar fractures. Julia was integral in getting the logistics of this study set up. Both of these projects had abstracts submitted for the 2019 AAOS meeting. Drs. Clement and Louer have also had a very successful year, with manuscripts circulated to co-authors for their primary projects.

Our current UCSD research resident, Amelia Lindgren, MD has worked on a number of projects this year. Perhaps the most novel is a project she has worked with Dr. Upasani on, which is our first collaborative project with the new Institute for Genomic Medicine here at Rady Children's. Dr. Lindgren reviewed treatment outcomes of patients with epiphyseal dysplasia and is also working with the Genomics institute to study this cohort.

In addition to our traditional four fellows and UCSD research resident working with the research team for the year, we hosted a 3rd year resident from Baylor, Scott, & White out of Temple, TX for a 3 month rotation. Jessica Hughes, MD, came to us via past fellow, Chris Souder, MD. Dr. Hughes became involved in at least 12 research projects in her time here, with at least 3 manuscripts submitted before her departure and another 4 drafts with co-authors for review. We were thrilled when she was able to return to San Diego in May to present some of her work at our annual Visiting Professor day.

The success of our fellows, residents, and student projects are heavily dependent on our core research staff. The 8 personnel dedicated to clinical research work tirelessly to ensure the appropriate approvals are in place before the trainee begins their time with us, then work very closely with them during their time here, and ensure follow through to manuscript completion once the trainee has moved on from Rady Children's. We are thankful to this dedicated team of individuals, half of whom have been with the department for almost 10 or more years. These staff members are a key component behind the research productivity of the division.



Carrie Bartley (Spine), Tracey Bastrom (Research Manager), Christy Farnsworth (Translational Research Manager), Sara Acevedo (Administrative Associate), Morgan Dennis (Sports/Trauma), Maddie Cross (Spine), Olivia Hughes (Sports/Trauma), Aileen Laurente (Spine), Megan Jeffords (OBRC), JD Bomar (Hip), Carlo Munar (Spine).

OBRC and Translational Research Year in Review

Written by Christine Farnsworth, MS

This year was a busy one for the OBRC. Five manuscripts were published, with an additional six submitted for consideration of publication. Seventeen research abstracts were presented at national and international meetings including IMAST, ICEOS, POSNA, PRISM, AAOS, ORS, and the UCSD Pediatric Research Symposium. But we consider our greatest accomplishment to be that we've supported our staff of 11 pediatric orthopedic surgeons and four fellows and have had a hand in answering some important clinical questions. We have also provided tools and resources for the training of future orthopedic surgeons and scientists.

Three-dimensional imaging and modeling research highlights for the year include an investigation by Jason Caffrey, MS (UCSD Bioengineering graduate student AND Medical student) and Dr. Upasani into the 3D acetabular coverage changes in DDH treated with Pemberton, Dega and San Diego osteotomies. Patient-specific 3D pelvic models were created using a dual material printer (bone was rigid and cartilage was a more flexible material) and each had a separate acetabular osteotomy, then coverage was assessed in 3D and compared between osteotomies in the same patient. This study was presented at POSNA, and as part of a special Rady Children's Orthopedic Department exhibit at the ICEOS meeting in Coronado, CA.

Amelia Lindgren, MD spent a portion of her residency research year with Dr. Upasani investigating the 3D morphology of the acetabulum in patients with epiphyseal dysplasias and began basic science work towards developing a bipedal animal model for DDH. Andrew Yoo, MD explored the histological parameters of muscle in patients with adolescent idiopathic scoliosis, comparing tissue from the concave and convex sides of the curve, during his residency research year with Sam Ward, PT, PhD and Dr. Newton.

The Orthopedic Biomechanics Research Center (OBRC) provided the venue for spinal rod material testing, spine deformity surgery correction biomechanics, and posterior spinal instrumentation testing. PhD candidate Sydnee Hyman is working with Dr. Newton to investigate the mechanical properties within the spine during spinal deformity correction surgery. Dr. Yaszay and Dr. Clement studied spine fixation parameters of different types of posterior instrumentation designed to alleviate PJK. We are very grateful to continue research collaborations with UCSD labs of excellence, including the Department of Orthopaedic Surgery Muscle Physiology lab (PIs Samuel Ward, PT, PhD and Bahar Shahidi, PhD), Systems Biology & Systems Medicine Lab (PI Shankar Subramaniam), Biological Sciences Cell and Developmental Biology (PI Kimberly Cooper, PhD) and the Department of Bioengineering: Cartilage Tissue Engineering Lab (PI Robert Sah, MD, ScD). Our newly formed Growth Plate Imaging group includes the OBRC and Eric Edmonds, MD, Bob Sah, MD, ScD with graduate and undergraduate students from UCSD and College of William & Mary.



This year we said good bye to Megan. She will be missed.

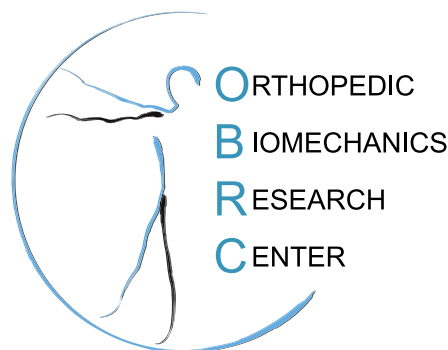
Recently, Megan Jeffords has moved to a position in industry where she will use her experience and skills obtained during her time at the OBRC to further serve the pediatric spine deformity community. During her three years with the OBRC, Megan was very productive as she was an author on 5 manuscripts (many more are to be submitted), attended international meetings (AAOS, ORS, IPOS) and presented studies. She has

been instrumental to the continued collaborations with the UCSD, especially with the Growth Plate Imaging group. Her dependability, subtle humor, and laser focus on problem solving are truly missed.

We will welcome Harsha Bandarlage to the OBRC team in June 2018. He received a BS in Engineering Physics from the University of Saskatchewan, Saskatchewan, Canada and has just completed his master of science work in Kinesiology at the University of Lethbridge, Alberta, Canada.



Harsha Bandarlage, MS has joined us as our new Biomechanical Engineer. Welcome!



Hip Team Year in Review

Written by Vidyadhar Upasani, MD

The International Center for Pediatric Hip Disorders at Rady Children's Hospital San Diego continues to be a world leader for the treatment of pediatric and adolescent hip conditions and continues to grow as a referral source for complex patients. Our team of surgeons is supported by nurses, physician extenders, orthopedic technologists, and research associates who allow us to provide the absolute best, cutting-edge care for our patients. In this issue we present some of the interesting cases treated this year, as well as notes on research projects that were presented at the POSNA Annual Meeting in Austin, Texas.

This year, two hip papers were nominated for clinical awards at POSNA. The first was a prospective study evaluating the outcomes of non-operative treatment of FAI. After a minimum of two-year follow-up, our study found that our non-operative protocol was successful in avoiding surgery in 82% of children with similar patient-reported outcome measures between patients treated with and without surgery. The second study was a 3D characterization of acetabular deficiency in patients with DDH. This study builds on our previous work of mapping the acetabulum. Using a cohort of normally developing children we described four distinct categories of acetabular dysplasia in patients with DDH to allow for patient-specific surgical correction.

Drs. Wenger and Upasani were invited to be faculty members at the Bernese Hip Symposium in February 2018. Dr. Wenger presented our outcomes for total hip arthroplasty in patients less than 30 years old and Dr. Upasani presented our technique to assess the 3D acetabular deficiency present in patients with DDH.



Dr. Lindgren with Dr. Stephen Kingsmore, President and CEO of Rady Children's Institute of Genomic Medicine

Our hip research program continues to be an active member of various multi-center prospective study groups including the International Hip Dysplasia Registry (IHDR), the International Perthes Study Group (IPSG), and will soon begin collaborating with the SCFE Longitudinal International Prospective Registry (SLIP).

We were fortunate to have a UCSD research resident (Amelia Lindgren) working with us again this year. Dr. Lindgren has been our liaison with the RCHSD genetics department and has been engaged in exciting work mapping the genome of families with multiple epiphyseal dysplasia and spondyloepiphyseal dysplasia. She has also been working closely with Dr. Kim Cooper in the Biological Sciences Department at UCSD to develop a bipedal DDH model in jerboas. This work will help us elucidate the relationship between mechanical stimulation of the tri-radiate cartilage and chondrocyte development to better understand the 3D development of the acetabulum.



Dr. Upasani and wife Priya in front of the Matterhorn while in Switzerland for the Bernese Hip Symposium.

Scoliosis and Spine Deformity Center Year in Review

Written by Burt Yaszay, MD

The Scoliosis program at Rady Children's Hospital continues to be a leader in the management of pediatric spinal deformity, treating all pathologies from the skull to the sacrum, Drs. Peter Newton, Burt Yaszay, and Salil Upasani remain active in all aspects of the spine program.

Dr. Newton will be assuming his role as President of the Scoliosis Research Society following the annual meeting in Bologna, Italy. Dr. Yaszay will assume his role as chair of the education committee while Dr. Miyajima (prior Rady fellow) will begin his tenure as chair of the program committee. Under the guidance of Dr. Newton, Drs. Miyajima and Yaszay will lead the development of the annual SRS program for 2019.

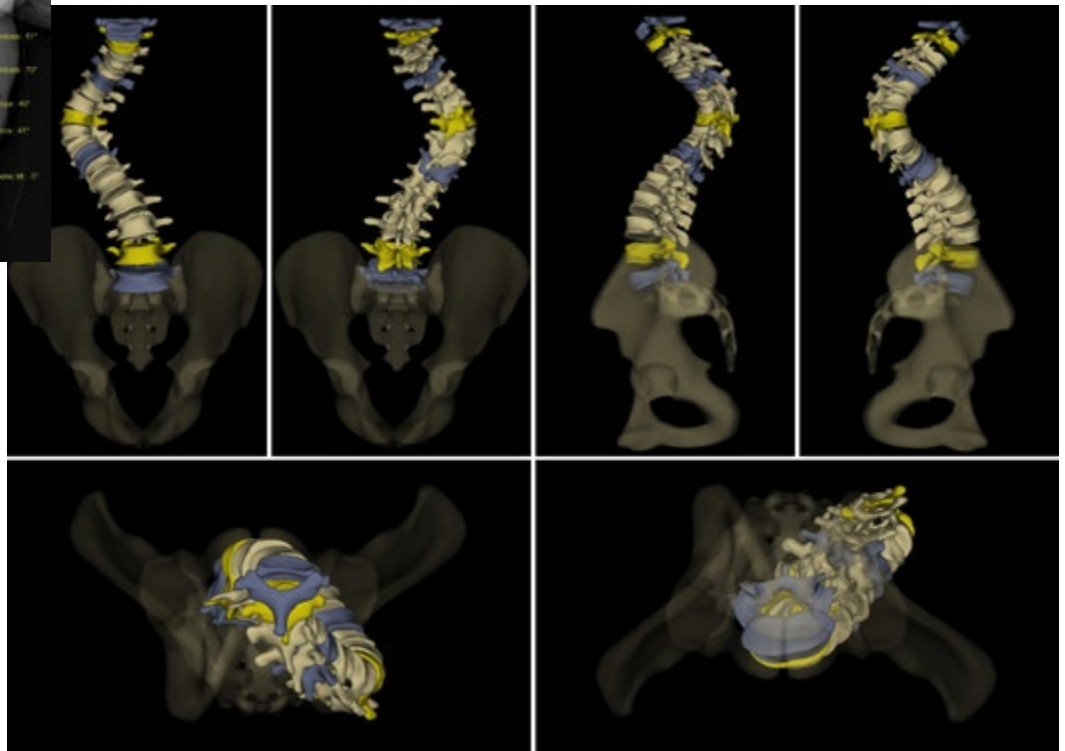
On the education side, we continue to educate fellows (local and international), residents, and young attending physicians. While most of this education occurs locally, some education programs take our spine surgeons to other states or countries. Future destinations include: Los Angeles, Italy, Portugal, New York to name a few.

The Spine research program remains in full effect. The Harms Study group and 3D imaging continue to be a focus resulting in multiple abstracts and papers by all members of the team. Dr. Newton received the 2017 Whitecloud award for best clinical paper for his presentation on spinal tethering at IMAST. Dr. Yaszay has assumed the role as president of the Pediatric Cervical Spine Study Group. Our biomechanics lab is back up running following its relocation studying the effects of various different spinal implants.

Clinically, our program continues to be on the forefront in the treatment of pediatric spinal pathology. With the recent improvement in our accelerated discharges in the AIS, we are now focusing on our neuromuscular population with help from our spine anesthesia team. Following the national concern regarding opiate use, we have streamlined the discharge medications for our spine patients. Dr. Upasani will be presenting this data at IMAST. Utilizing his experience with baclofen pumps, Dr. Yaszay has implanted a novel catheter allowing Spinal Muscular Atrophy patients with fused spines to receive the newly approved intrathecal drug, Spinraza. Together with a dedicated group of midlevel providers and nurses, Drs. Newton, Yaszay, and Upasani continue to ensure that Rady Children's Hospital provides the most advanced pediatric spinal care.



3D analysis of spine conditions continues to be a focus of the spine research program.



Sports Medicine for the Young Athlete

360 Sports Medicine Year in Review

Written by Eric Edmonds, MD



The 360 Sports Medicine program is now in our sixth year and we continue to be productive clinically and academically. We continue to serve the community in San Diego County, through our offices at Rady Children's Hospital, Escondido, and Oceanside; but, we are moving to expand our efforts to southern Riverside county through the new office opening in Murrieta. We would not be able to have the reach that we now have without the continued support of our Sports Medicine colleagues (Drs. Cheng, Taylor, and Achar) and our Advance Practice Providers (Allison Dickinson, Phil Stearns, and Lynn Manheim). Moreover, the volume of patients would be significantly depleted without our Athletic Trainer staff, Katie Veit and Kristina Johnson; both of whom have made contributions not only clinically, but are now actively engaged in our research endeavors. Yet, all of it, would not be possible without our care coordinator Val Young-Calandra, RN and our administrative assistants (Taraysa Morrow and Suzie Cox). Our patients would be lost without our administrative team guiding them through the system, since they serve as ombudsmen, mothers, and village sages (depending on the need at hand).

Last year we saw the development of the Pediatric-Sports Orthopedic Resident rotation (due to an unfortunate situation was put on hold for much of this year); but, instead, this year we had our first non-UCSD Research Resident who rotated for a 3-month block - Jessica Hughes. Coming to us from Scott and White in Temple, TX we were not sure how it was going to work out. But, Jess is a superstar that wasted no time. Originally, we had her scheduled to work on Sports projects, but she quickly expanded into the realm of Spine, Trauma, and Hand (so you might read about her in the research section, as well).

Even without Jess, we have been very productive academically. We had podium presentations at AAOS, PRISM and POSNA. Dr. Pennock was a candidate for the best clinical paper at POSNA for his non-operative study on femoroacetabular impingement (which many agree was probably the best paper, but lost because it told surgeons not to do surgery). Katie Rickert (our newest fellow-turned-partner, Class of 2017) was the lead author with Eric Edmonds on the Best Pediatric Video at the AAOS Annual meeting in New Orleans, for her project on outcomes of adolescent modified Brostrom procedures. This project was our first-time submitting to the category within the Orthopedic Video Theater at the annual meeting and it really was a testimony to JD Bomar (the man of many hats) who put the award winning video together.

We are looking forward to the continued growth and success of the 360 Sports Medicine program as we continue our mission to serve the youth of Southern California. To help align this undertaking, the hospital hired Richard Butler (the son of a long time pediatrician in the San Diego area) to help focus our efforts. Over the past fiscal year, he has helped put our program on the map with over half of the high school athletic directors in the county and secured our program as the authority in pediatric and adolescent sports medicine with the CIF (California Interscholastic Federation) San Diego Section. We have improved access direct from the field, and are now developing educational programs for the athletic trainers, physical therapist, and athletic directors to improve concussion and mental health issues.



Val Young-Calandra, Katie Veit, and Kristina Johnson

Giving Back – Mexico

Kids First – San Miguel de Allende, Mexico

Kathleen Rickert, MD



Kids First team.

I attended my second annual trip with Kids First to San Miguel de Allende, Mexico this May. Kids First is the creation of three Duke University-trained orthopedic surgeons who saw the need for pediatric orthopedic care in Central and South America. This was the 26th annual trip and the 13th year in San Miguel. While the structure of the team varies somewhat from trip to trip, the typical configuration is three to five orthopedic surgeons, a five-member anesthesia team consisting of anesthesiologists, nurse anesthetists and residents as well as numerous nurses, two therapists/orthotists and multiple other ancillary colleagues. This year the team topped out at 29 participants. Occasionally a team member misses a single trip or new additions are included but the group has remained largely intact over the years.

The team arrives in San Miguel on Saturday. Sunday, we hold clinic, set up the ORs, and bring in all of our supplies. Nearly all of the supplies are donated by US hospitals and medical companies then transported to the site. Our single day clinic on Sunday allows us to evaluate patients and determine if they are surgical candidates and provide other recommendations if they are not. This year we saw close to 200 kids in clinic and indicated 59 children for surgery. Our busy Sunday translated into a busy yet productive week of surgery. In total, we completed over 120 procedures on 57 patients with between 12 to 17 surgeries per day. The week is completed with downtime and team bonding before flying back to our respective homes.

Teamwork makes the dream work on this trip and every person has a vital role to keep the forward momentum from start to finish. Additionally, the community of San Miguel, along with the hospital and local government, have played a huge part in making these trips successful. A willingness to work with Kids First, and a coordinated planning effort by everyone involved ensures the patients are receiving the proper care and follow-ups throughout the year.



Dr. Rickert driving in a screw during a surgical case.





Haemish Crawford, FRACS

*Starship Children's Hospital
Auckland, New Zealand*

May 4, 2018

Our program was honored to have Mr. Haemish Crawford as the 45th Annual David Sutherland Pediatric Orthopedic Surgery Visiting Professor. Mr. Crawford is a pediatric orthopedic surgeon from Auckland, New Zealand where he practices at the Starship Children's Hospital. An expert in almost all fields, he shared his experience with trauma, SCFE, spine surgery, and general orthopedic surgery.

Our fellows and residents presented their excellent research, which generated discussion among the participants and great insights by Mr. Crawford. His sense of humor and humility was appreciated by all. Dennis Wenger ended the conference, as he has for many years, with a rapid fire case presentation of common pediatric orthopedic surgical conditions.

Many thanks to JD Bomar for his help in keeping everything in order, to Trang Pham for arranging all of the food and breaks, to Tracey Bastrom and her team for their excellent research over the year, and particularly to the audience participants who challenged the presenters and added their expertise to the discussion. We ended the day with a wonderful dinner, hosted by Peter and Cathy Newton at their beautiful home in La Jolla.



Carter Clement, Julia Sanders, Haemish Crawford, Peter Newton, Josh Holt, and Craig Louer stop for a photo during a break between presentations.

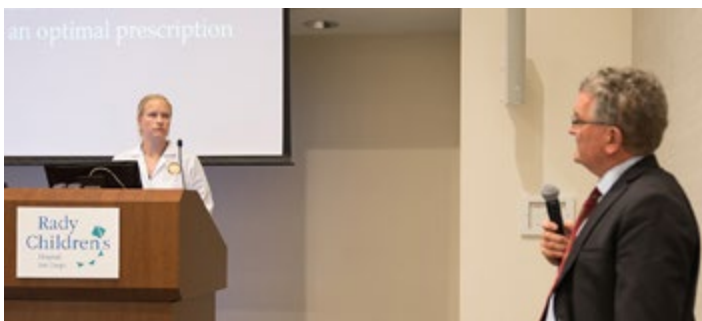
45th Annual David H. Sutherland Visiting Professorship



Dr. Newton introducing Mr. Crawford to kick off the 45th annual David H. Sutherland Visiting Professorship.



Attentive listeners.



Dr. Amelia Lindgren fielding questions from Mr. Crawford regarding her study of post-op opiate and benzodiazepine regimen following posterior spinal fusion.

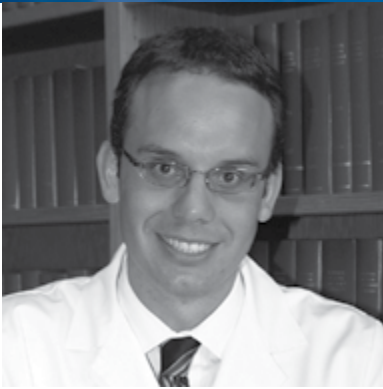


Visiting professorship closing ceremony.



Former fellow Bob Cho (class of 2010) engaged in discussion following a presentation.

Notes From A Former Fellow



Humberto Guzmán, MD, FAAOS

Catedrático Auxiliar- UPR

Hospital Auxilio Mutuo

(Fellow – 2008-2009)

After training in San Diego, I always knew I wanted to return to Puerto Rico to serve my people as a pediatric orthopedic surgeon. In these trying times I especially have to acknowledge that my decision to return was the correct one. Hurricane Maria changed the lives of all Puerto Ricans in one way or another. The destruction left behind an island without power or communication, and disconnected from its basic needs, including medical and surgical care. The medical crisis initially involved primary care. Access to doctors and basic maintenance medications was cut off. Our initial focus consisted of providing this care.



health care system. I now continue my private and academic practice with a new perspective after reaching out to my medical background and I am proud to have been more than an orthopedic surgeon when that was needed the most.

Our island is recovering well, and we will be stronger than ever. Of course, all the help we can get is wonderful. It is easy to help, just come visit to see the beauty of Puerto Rico and our beaches, taste our food, meet our wonderful people. Consider a meeting here, as we have plenty to offer and of the highest quality. You will fall in love with the island and you know we are back in business.

– Humberto Guzman – San Juan, Puerto Rico

For the last eight years after establishing *Haiti Stands On Its Feet* we have gone there approximately 25 times to provide surgical care. Of course, as tragedy hit our island, we were going to do our part and we established *Puerto Rico Stands On Its Feet*. The day after the hurricane we lead a team of approximately 25 health professionals and set out for shelters and isolated communities to ensure that the most sick had access to medical care. With help from donations we were able to provide their medications for the first two months, until the pharmacies and health care system started operating more normally. The quick response saved lives and the experience created a connection with my people that has grown ever stronger.

After visiting 35 of the most hard hit towns and seeing thousands of patients, our team *Puerto Rico Stands On Its Feet* completed its labor two months after Maria. At that time our medical practices started normalizing and currently things are finally back to normal in our



Notes From A Former Fellow

Lissette Salgueiro, MD, FAAOS

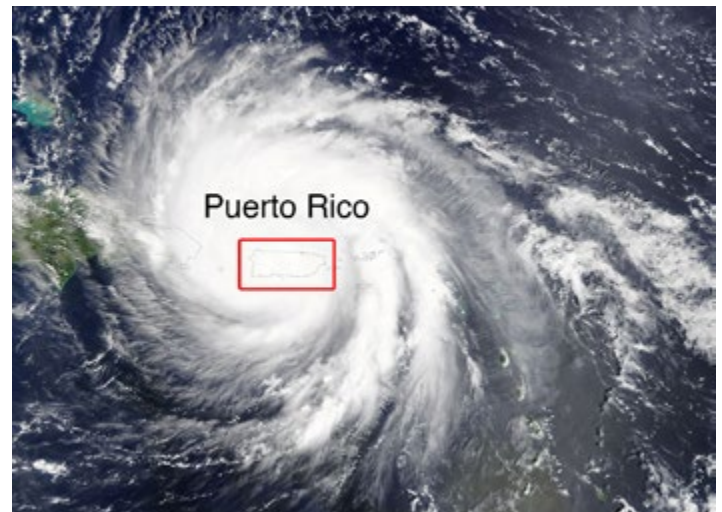
*HIMA Hospital at Caguas
Auxilio Mutuo Hospital at Hato Rey
SER de Puerto Rico at Hato Rey*

(Fellow – 2013-2014)



Serving the people of my Island has been a priority since I started my medical career. With a pediatric population reaching a million and only 10 pediatric orthopaedic surgeons in the Island I could not go elsewhere. These last four years in practice have been extremely gratifying. Training in one of the best Fellowships in the states, has prepared me to take care of a variety of pediatric orthopaedic conditions. Besides private practice, I am one of the two Pediatric Orthopaedic Surgeons that serve at SER de Puerto Rico, a nonprofit organization that takes care of patients with conditions such as cerebral palsy, muscular dystrophy, spina bifida, among others.

The recent strike of hurricane Maria has definitively marked our lives. We have had hurricanes in the past but nothing of this magnitude. Having the whole Island with no power, water, or communication was a great challenge. Power generators really helped, but again no communications made things very difficult. We had to go daily to the different hospitals we work on to take care of emergencies, perform patient evaluations in the lobby and even visit post-op patient houses to make sure that pins and casts were removed or changed at the appropriate time. Although the metropolitan area quickly recovered, many patients I serve are from rural areas of the Island and they were not able to reach us because roads were blocked and even some of them were gone.

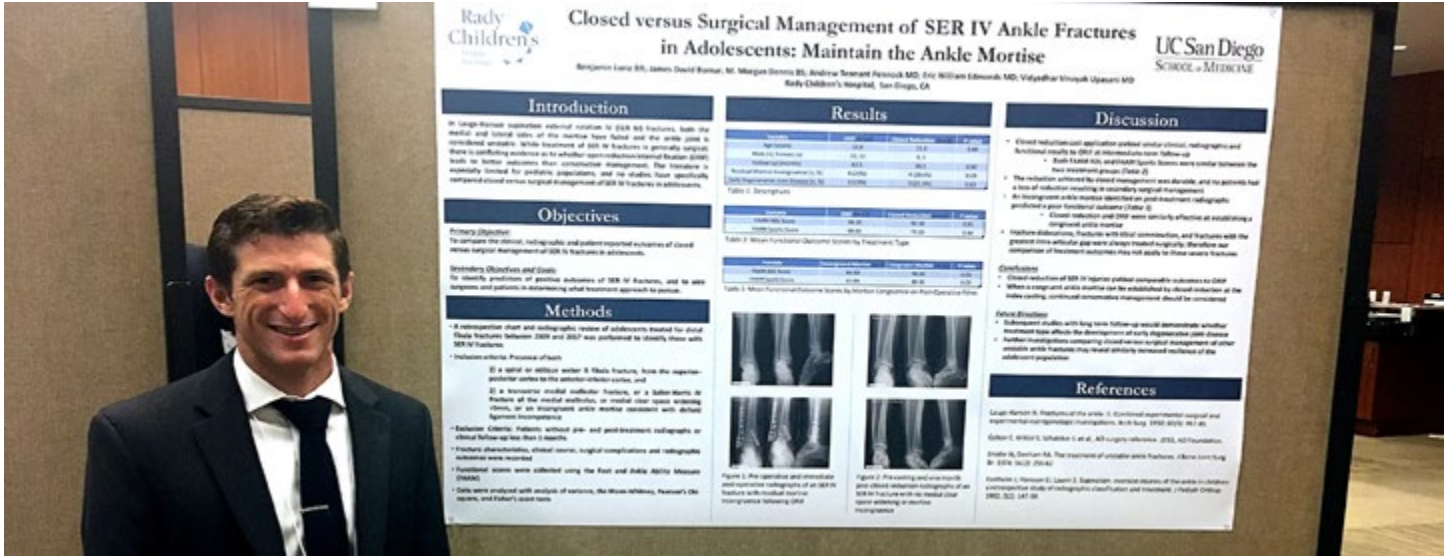


Outside the orthopaedic scope, it was fascinating how the people went out to the streets to help. Either cleaning the roads, helping with donations, or taking food, water and personal care items to the shelters. Thank God we are almost back to normal with great improvements and even more strength than before. Our beautiful Island is back on its feet. I hope one day you can come to visit and enjoy all it has to offer.

– Lissette Salgueiro – Hato Rey, Puerto Rico

Educating at Home

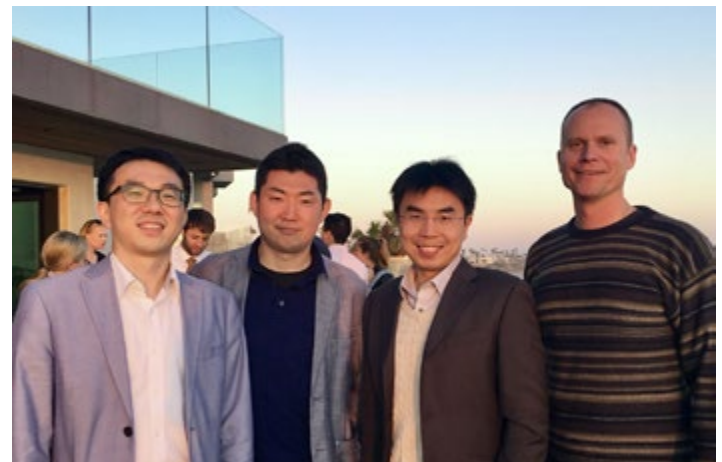
Local Orthopedic Teaching Activities



Ben Lurie (UCSD Medical Student) presenting his work on SER IV fractures at the UCSD Summer Research Training Program event, January, 2018.



Ryan Fitzgerald (one of last year's fellows) is already giving back to the program. Ryan and wife Elim volunteered their new born for Dr. Mubarak's annual US course. Dr. Clement (one of this year's fellows) is pictured as the beneficiary of the Fitzgerald's generosity (Although Ryan probably appreciated the refresher just prior to starting his practice).



The APPOS (Asia Pacific Pediatric Orthopaedic Society) stopped in San Diego this year. Their visit coincided with our Visiting Professor meeting. This photo was taken at during the VP after party. Hoon Park (South Korea), Ryosuke Yamaguchi (Japan), Alec Hung (Hong Kong), and Dr. Edmonds.

Educating at Home



Christy Farnsworth (OBRC) and Casey Abare (clinical CPNP) at the 11th International Congress of Early Onset Scoliosis (ICEOS), Coronado, San Diego, CA – November 2017.

Unrescindable Gratitude



Eleven years ago, young Reilly came to our institution in fulminant sepsis with disseminated MRSA that affected bilateral femurs, distal tibia/fibulas, and knee joints. At first he was in serious condition with renal insufficiency, hypotension, and eventually DVT's, all from a rather innocuous fall whilst playing basketball. But, through a team approach guided by the Divisions of Infectious Disease, Intensive care, and Orthopedic surgery, he not only made a full recovery, but has gone on to complete the YMCA's Ride Across California and is currently employed with a new start-up tech company. In gratitude for his care, his birthday present to himself was a tattoo of the Rady Children's Hospital San Diego Kite logo.



Andre, Abigail, Chrissy, Kiana (Summer Medical Academy alum) and Dr. Upasani. Kiana came to observing Dr. Upasani's clinic.



The CORTICES study group held it's annual meeting at RCHSD this year.

POSNA Annual Meeting / Alumni Reunion

POSNA Annual Meeting / Alumni Reunion

May 9-12, 2018

Austin, TX

This year, POSNA (Pediatric Orthopedic Society of North America) held their annual meeting in Austin, TX. Once again, the Rady Children's Hospital Orthopedic department was well represented with eight podium presentations, seven ePosters, and two paper posters. Three of the 10 clinical award nominees were papers with RCHSD staff: 3D Characterization of Acetabular Deficiency in Patients with DDH (Upasani et al.); Disc Degeneration in Unfused Caudal Motion Segments 10yrs Following Surgery for AIS (Dr. Newton was a coauthor on this Harms Study Group project); and Non-Operative Management of FAI: A Prospective study (Pennock et al.).

As is typically the case, the POSNA meeting is an excellent opportunity to catch up with former fellows. Trang Pham and Tracey Bastrom organized our annual Alumni Reunion to take place in Austin and it went off without a hitch. The accompanying photos include many of our prior fellows who attended the meeting and our reunion event.



Dr. Wenger catching up with David Lazarus (class of 2014).



Trang Pham (RCHSD Education Coordinator), Tamir Bloom (class of 2007), Amanda Asaro (RCHSD PA), Megan Imrie (class of 2009), Scott Mubarak, and Adam Barmada (class of 2002).

POSNA Annual Meeting / Alumni Reunion



Wally Yassir (class of 2001) and Shyam Kishan (class of 2005).



Dr. Chambers (class of 1990), our new Education Director, with Megan Imrie (class of 2009), and Corey Fuller (class of 2016)



Michelle Marks (Harms Study Group, Setting Scoliosis Straight Foundation), with Native Texan Rod Capelo (class of 2005).



The class of 2013 – Brian Scannell, John Kempainen, and Chris Souder. We missed Avrum Joffe at this one, but perhaps he will come next year.



Go Team Spine! Keith Bachmann (class of 2016) with Peter and Kathy Newton.



Ray Liu (class of 2010) and Ryan Goodwin (class of 2004).

POSNA Annual Meeting / Alumni Reunion



Greg White (class of 1997), Peter Newton, Rob de Swart (class of 1994), and Scott Mubarak.



Salil Upasani with Morgan Dennis (Sports/Trauma Research Coordinator), Carter Clement (current fellow), and Amelia Lindgren (current Research Resident).



Emily Osborne (former Research Resident) and Dan Bland (class of 2017).



Amanda Asaro (RCHSD PA) with Josh Murphy (class of 2015).



Jon Peterson (class of 2014), Jay Albright (class of 2004), Matt Schmitz (class of 2012), and Maya Pring (class of 2003).

POSNA Annual Meeting / Alumni Reunion



Fellowship class of 2004 – Stefan Parent, Tracey Bastrom (ortho research manager), Ryan Goodwin, Michelle Marks, and Jay Albright.



David Lazarus and Matt Ellington both from the class of 2016. Dr. Ellington is Texas native and helped pick the reunion venue. Thanks Matt!



Eric Fornari (class of 2012), Eric Edmonds (class of 2008), and Patrick Henderson (class of 2008).



Dr. Pennock fielding questions during the panel discussion following the presentation of his award nominated paper on non-operative treatment of FAI.



Dr. Newton with several generations of Research Resident. Emily Osborne (RR 2013/2014), Amelia Lindgren (current RR), Salil Upasani (RR from 2006 to 2008), Dylan Kluck (RR 2016/2017), and Raghav Badrinath (RR 2016/2017).

Documentation (Our Publications)



Orthopedic residents absorbing the discussion during the dynamic Rady Children's Hospital Friday morning orthopedic x-ray review conference.

The Rady Children's Hospital-University of California San Diego orthopedic program continues as one of the world's leading centers for children's orthopedic clinical and biomechanical research. Our work is published in the most important orthopedic journals and is widely quoted. The publications listed below were produced by our department between July, 2016 – December 2017.

Amir D, Yaszay B, Bartley CE, Bastrom TP, Newton PO. Does Leveling the Upper Thoracic Spine Have Any Impact on Postoperative Clinical Shoulder Balance in Lenke 1 and 2 Patients? *SPINE*. 2016;41:1122-7.

Amoli MA, Flynn JM, Edmonds EW, Glotzbecker MP, Kelly DM, Sawyer JR. Gender Differences in Pediatric Orthopaedics: What Are the Implications for the Future Workforce? *Clinical Orthopaedics and Related Research*. 2016;474:1973-8.

Carey JL, Wall EJ, Grimm NL, Ganley TJ, Edmonds EW, Anderson AF, et al. Novel Arthroscopic Classification of Osteochondritis Dissecans of the Knee. *The American Journal of Sports Medicine*. 2016;44:1694-8.

Düppe K, Gustavsson N, Edmonds EW. Developmental Morphology in Childhood Patellar Instability. *Journal of Pediatric Orthopaedics*. 2016;36:870-6.

Edmonds EW, Lin C, Farnsworth CL, Bomar JD, Upasani VV. A Medial Portal for Hip Arthroscopy in Children With Septic Arthritis. *Journal of Pediatric Orthopaedics*. 2016:1. ePub ahead of print.

Ellington MD, Edmonds EW. Pediatric Elbow and Wrist Pathology Related to Sports Participation. *Orthopedic Clinics of North America*. 2016;47:743-8.

Ho B, Edmonds EW, Chambers HG, Bastrom TP, Pennock AT. Risk Factors for Early ACL Reconstruction Failure in Pediatric and Adolescent Patients. *Journal of Pediatric Orthopaedics*. 2016:1. ePub ahead of print.

Hosseini P, Pawelek J, Mundis GM, Yaszay B, Ferguson J, Helenius I, et al. Magnetically controlled Growing Rods for Early-onset Scoliosis: A Multicenter Study of 23 Cases with Minimum 2 years Follow-up. *SPINE*. 2016;41:1456-62.

Jain A, Sponseller PD, Shah SA, Samdani A, Cahill PJ, Yaszay B, Njoku DB, Abel MF, Newton PO, Marks MD, et al. Subclassification of GMFCS Level-5 Cerebral Palsy as a Predictor of Complications and Health-Related Quality of Life After Spinal Arthrodesis. *The Journal of Bone and Joint Surgery*. 2016;98:1821-8.

Jankowski PP, Bastrom T, Ciacci JD, Yaszay B, Levy ML, Newton PO. Intraspinal Pathology Associated With Pediatric Scoliosis. *SPINE*. 2016;41:1600-5.

Kemppainen JW, Hood KA, Roodcroft JH, Schlechter JA, Edmonds EW. Incomplete Follow-up After Growth Modulation Surgery. *Journal of Pediatric Orthopaedics*. 2016;36:516-20.

Kinney MC, Nagle D, Bastrom T, Linn MS, Schwartz AK, Pennock AT. Operative Versus Conservative Management of Displaced Tibial Shaft Fracture in Adolescents. *Journal of Pediatric Orthopaedics*. 2016;36:661-6.

Mittal A, Bomar JD, Jeffords ME, Huang M-T, Wenger DR, Upasani VV. Defining the lateral edge of the femoroacetabular articulation: correlation analysis between radiographs and computed tomography. *Journal of Children's Orthopaedics*. 2016;10:365-70.

Muzykewicz DA, Goldin A, Lopreiato N, Fields K, Munch J, Dwek J, Mubarak SJ. Nonossifying fibromas of the distal tibia: possible etiologic relationship to the interosseous membrane. *Journal of Children's Orthopaedics*. 2016;10:353-8.

Parvaresh KC, Upasani VV, Bomar JD, Pennock AT. Secondary Ossification Center Appearance and Closure in the Pelvis and Proximal Femur. *Journal of Pediatric Orthopaedics*. 2016:1. ePub ahead of print.

Pennock AT, Salgueiro L, Upasani VV, Bastrom TP, Newton PO, Yaszay B. Closed Reduction and Percutaneous Pinning Versus Open

Documentation (Our Publications)

Reduction and Internal Fixation for Type II Lateral Condyle Humerus Fractures in Children Displaced ≥ 2 mm. *Journal of Pediatric Orthopaedics*. 2016;36:780-6.

Pytiak A, Bomar JD, Peterson JB, Schmitz MR, Pennock AT, Wenger DR, Upasani VV. Analysis of spinal alignment and pelvic parameters on upright radiographs: implications for acetabular development. *Journal of Hip Preservation Surgery*. 2016;3:208-14.

Samdani AF, Bennett JT, Ames RJ, Asghar JK, Orlando G, Pahys JM, Yaszay B, Miyajni F, Lonner BS, Lehman RA Jr, Newton PR, et al. Reversible Intraoperative Neurophysiologic Monitoring Alerts in Patients Undergoing Arthrodesis for Adolescent Idiopathic Scoliosis. *The Journal of Bone and Joint Surgery*. 2016;98:1478-83.

Sankar WN, Gornitzky AL, Clarke NMP, Herrera-Soto JA, Kelley SP, Matheney T, Mulpuri K, Schaeffer EK, Upasani VV, et al. Closed Reduction for Developmental Dysplasia of the Hip: Early-term Results From A Prospective, Multicenter Cohort. *Journal of Pediatric Orthopaedics*. 2016;1. ePub ahead of print.

Schlung JE, Bastrom TP, Roocroft JH, Newton PO, Mubarak SJ, Upasani VV. Femoral Neck Aspiration Aids in the Diagnosis of Osteomyelitis In Children With Septic Hip. *Journal of Pediatric Orthopaedics*. 2016;1. ePub ahead of print.

Sponseller PD, Jain A, Newton PO, Lonner BS, Shah SA, Shuffelbarger H, et al. Posterior Spinal Fusion With Pedicle Screws in Patients With Idiopathic Scoliosis and Open Triradiate Cartilage. *Journal of Pediatric Orthopaedics*. 2016;36:695-700.

Stepanovich M, Bastrom TP, Munch J, Roocroft JH, Edmonds EW, Pennock AT. Does operative fixation affect outcomes of displaced medial epicondyle fractures? *Journal of Children's Orthopaedics*. 2016;10:413-9.

Stepanovich M, Bomar JD, Pennock AT. Are the Current Classifications and Radiographic Measurements for Trochlear Dysplasia Appropriate in the Skeletally Immature Patient? *Orthopaedic Journal of Sports Medicine*. 2016;4(10). eCollection

Upasani VV, Bomar JD, Matheney TH, Sankar WN, Mulpuri K, Price CT, et al. Evaluation of Brace Treatment for Infant Hip Dislocation in a Prospective Cohort. *The Journal of Bone and Joint Surgery*. 2016;98:1215-21.

Upasani VV, Ketwaroo PD, Estroff JA, Warf BC, Emans JB, Glotzbecker MP. Prenatal diagnosis and assessment of congenital spinal anomalies: Review for prenatal counseling. *World Journal of Orthopaedics*. 2016;7:406.

Upasani VV, Parvaresh KC, Pawelek JB, Miller PE, Thompson GH, Skaggs DL, et al. Age at Initiation and Deformity Magnitude Influence Complication Rates of Surgical Treatment With Traditional Growing Rods in Early-Onset Scoliosis. *Spine Deformity*. 2016;4:344-50.

Ahmed SI, Bastrom TP, Yaszay B, Newton PO. 5-Year Reoperation Risk and Causes for Revision After Idiopathic Scoliosis Surgery. *SPINE*. 2017;42:999-1005.

Bartley CE, Yaszay B, Bastrom TP, Shah SA, Lonner BS, Asghar J, et al. Perioperative and Delayed Major Complications Following Surgical Treatment of Adolescent Idiopathic Scoliosis. *The Journal of bone and joint surgery American volume*. 2017;99:1206-12.

Bennett JT, Samdani AF, Bastrom TP, Ames RJ, Miyajni F, Pahys JM, et al. Factors affecting the outcome in appearance of AIS surgery in terms of the minimal clinically important difference. *European Spine Journal*. 2017;26:1782-8.

Cherkasskiy L, Caffrey JP, Szweczyk AF, Cory E, Bomar JD, Farnsworth CL, Jeffords M, Wenger DR, Sah RL, Upasani VV. Patient-specific 3D models aid planning for triplane proximal femoral osteotomy in slipped capital femoral epiphysis. *Journal of children's orthopaedics*. 2017;11:147-53.

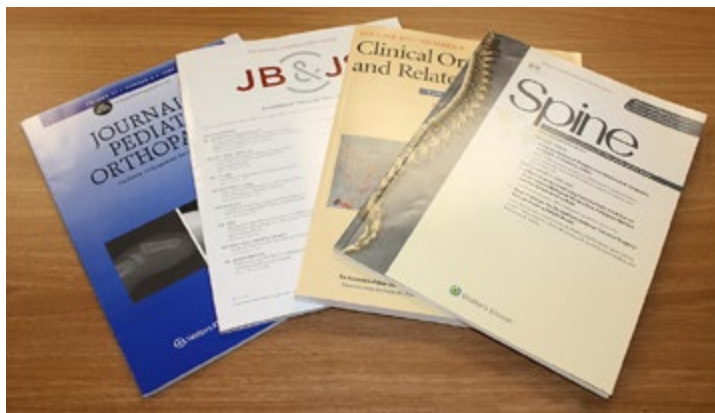
Choi E, Yaszay B, Mundis G, Hosseini P, Pawelek J, Alanay A, et al. Implant Complications After Magnetically Controlled Growing Rods for Early Onset Scoliosis. *Journal of Pediatric Orthopaedics*. 2017;37:e588-e92.

Edmonds EW, Bastrom TP, Roocroft JH, Calandra-Young VA, Pennock AT. The Pediatric/Adolescent Shoulder Survey (PASS): A Reliable Youth Questionnaire With Discriminant Validity and Responsiveness to Change. *Orthopaedic journal of sports medicine*. 2017;5(3). eCollection

Fletcher ND, Glotzbecker MP, Marks M, Newton PO. Development of Consensus-Based Best Practice Guidelines for Postoperative Care Following Posterior Spinal Fusion for Adolescent Idiopathic Scoliosis. *SPINE*. 2017;42:E547-E54.

Foran I, Upasani VV, Wallace CD, Britt E, Bastrom TP, Bomar JD, et al. Acute Pediatric Monteggia Fractures: A Conservative Approach to Stabilization. *Journal of pediatric orthopaedics*. 2017;37:e335-e41.

Fuller CB, Farnsworth CL, Bomar JD, Jeffords ME, Murphy JS, Edmonds EW, Pennock AT, Wenger DR, Upasani VV. Femoral version: Comparison among advanced imaging methods. *Journal of orthopaedic research: official publication of the Orthopaedic Research Society*. 2017. ePub ahead of print.



Documentation (Our Publications)

- Gaunders CL, Bastrom T, Pennock AT. Second Fractures Are Not a Risk Factor for Anterior Cruciate Ligament Reconstruction Failure. *The American journal of sports medicine*. 2017;45:3210-5.
- Goldin A, Muzykewicz DA, Dwek J, Mubarak SJ. The aetiology of the non-ossifying fibroma of the distal femur and its relationship to the surrounding soft tissues. *Journal of children's orthopaedics*. 2017;11:373-9.
- 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. *Journal of Pediatric Orthopaedics*. 2017;37:e563-e6.
- Hollenbeck SM, Bomar JD, Wenger DR, Yaszay B. Electronic Medical Record Adoption. *Journal of Pediatric Orthopaedics*. 2017;37:424-8.
- Jain A, Modhia UM, Njoku DB, Shah SA, Newton PO, Marks MC, Bastrom TP, Miyajima F, Sponseller PD. Recurrence of Deep Surgical Site Infection in Cerebral Palsy After Spinal Fusion Is Rare. *Spine deformity*. 2017;5:208-12.
- Jain A, Sponseller PD, Shah SA, Yaszay B, Njoku DB, Miyajima F, Newton PO, Bastrom TP, Marks MC, Harms Study Group. Incidence of and Risk Factors for Loss of 1 Blood Volume During Spinal Fusion Surgery in Patients With Cerebral Palsy. *Journal of Pediatric Orthopaedics*. 2017;37:e484-e7.
- Jain A, Sullivan B, Shah SA, Samdani AF, Yaszay B, Marks MC, et al. Caregiver Perceptions and Health-Related Quality-of-Life Changes in Cerebral Palsy Patients After Spinal Arthrodesis. *Spine*. 2017;1. ePub ahead of print.
- Jung ST, Wang SI, Moon YJ, Mubarak SJ, Kim JR. Posttraumatic Tibiofibular Synostosis After Treatment of Distal Tibiofibular Fractures in Children. *Journal of Pediatric Orthopaedics*. 2017;37:532-6.
- Kleis K, Schlechter JA, Doan JD, Farnsworth CL, Edmonds EW. Under Pressure. *Journal of Pediatric Orthopaedics*. 2017;1. ePub ahead of print.
- Le Navéaux F, Labelle H, Parent S, Newton PO, Aubin C-E. Are There 3D Changes in Spine and Rod Shape in the 2 Years After Adolescent Idiopathic Scoliosis Instrumentation? *Spine*. 2017;42:1158-64.
- Li Y, Donohue KS, Robbins CB, Pennock AT, Ellis HB, Nepple JJ, et al. Reliability of Radiographic Assessments of Adolescent Midshaft Clavicle Fractures by the FACTS Multicenter Study Group. *Journal of orthopaedic trauma*. 2017;31:479-84.
- Lonner BS, Ren Y, Newton PO, Shah SA, Samdani AF, Shufflerbarger HL, Aşghar J, Sponseller P, Betz RR, Yaszay B. Risk Factors of Proximal Junctional Kyphosis in Adolescent Idiopathic Scoliosis-The Pelvis and Other Considerations. *Spine deformity*. 2017;5:181-8.
- Lonner BS, Toombs CS, Mechlin M, Ciavarrà G, Shah SA, Samdani AF, Sponseller P, Shufflerbarger HL, Betz RR, Yaszay B, Newton PO. MRI Screening in Operative Scheuermann Kyphosis: Is it Necessary? *Spine Deformity*. 2017;5:124-33.
- Lonner BS, Toombs CS, Paul JC, Shah SA, Shufflerbarger HL, Flynn JM, Newton PO. Resource Utilization in Adolescent Idiopathic Scoliosis Surgery: Is There Opportunity for Standardization? *Spine deformity*. 2017;5:166-71.
- Murphy JS, Upasani VV, Yaszay B, Bastrom TP, Bartley CE, Samdani A, Lenke LG, Newton PO. Predictors of Distal Adding-on in Thoracic Major Curves With AR Lumbar Modifiers. *SPINE*. 2017;42:E211-E8.
- Neumann JA, Zgonis MH, Rickert KD, Bradley KE, Kremen TJ, Boggess BR, et al. Interposition Dermal Matrix Xenografts: A Successful Alternative to Traditional Treatment of Massive Rotator Cuff Tears. *The American Journal of Sports Medicine*. 2017;45:1261-8.
- Newton PO, Bastrom TP, Yaszay B. Patient-Specific Risk Adjustment Improves Comparison of Infection Rates Following Posterior Fusion for Adolescent Idiopathic Scoliosis. *The Journal of bone and joint surgery American volume*. 2017;99:1846-50.
- Parvaresh KC, Osborn EJ, Reighard FG, Doan J, Bastrom TP, Newton PO. Predicting 3D Thoracic Kyphosis Using Traditional 2D Radiographic Measurements in Adolescent Idiopathic Scoliosis. *Spine deformity*. 2017;5:159-65.
- Pasha S, Flynn JM, Sponseller PD, Orlando G, Newton PO, Cahill PJ, et al. Timing of Changes in Three-Dimensional Spinal Parameters After Selective Thoracic Fusion in Lenke 1 Adolescent Idiopathic Scoliosis: Two-Year Follow-up. *Spine deformity*. 2017;5:409-15.
- Pennock AT, Bastrom TP, Upasani VV. Elastic Intramedullary Nailing Versus Open Reduction Internal Fixation of Pediatric Tibial Shaft Fractures. *Journal of pediatric orthopedics*. 2017;37:e403-e8.
- Pennock AT, Ellis HB, Willimon SC, Wyatt C, Broida SE, Dennis MM, Bastrom TP. Intra-articular Physeal Fractures of the Distal Femur: A Frequently Missed Diagnosis in Adolescent Athletes. *Orthopaedic journal of sports medicine*. 2017;5(10). eCollection
- Pennock AT, Ho B, Parvanta K, Edmonds EW, Chambers HG, Roocroft JH, Bastrom TP. Does Allograft Augmentation of Small-Diameter Hamstring Autograft ACL Grafts Reduce the Incidence of Graft Retear? *The American Journal of Sports Medicine*. 2017;45:334-8.
- Pytiak AV, Stearns P, Bastrom TP, Dwek J, Kruk P, Roocroft JH, Pennock AT. Are the Current Little League Pitching Guidelines Adequate? A Single-Season Prospective MRI Study. *Orthopaedic journal of sports medicine*. 2017 19;5(5). eCollection
- Salgueiro L, Roocroft JH, Bastrom TP, Edmonds EW, Pennock AT, Upasani VV, Yaszay B. Rate and Risk Factors for Delayed Healing Following Surgical Treatment of Lateral Condyle Humerus Fractures in Children. *Journal of Pediatric Orthopaedics*. 2017;37:1-6.

Documentation (Our Publications)

Scannell BP, Yaszay B, Bartley CE, Newton PO, Mubarak SJ. Surgical Correction of Scoliosis in Patients With Duchenne Muscular Dystrophy. *Journal of Pediatric Orthopaedics*. 2017;37:e464-e9.

Sikora-Klak J, Bomar JD, Paik CN, Wenger DR, Upasani V. Comparison of Surgical Outcomes Between a Triplane Proximal Femoral Osteotomy and the Modified Dunn Procedure for Stable, Moderate to Severe Slipped Capital Femoral Epiphysis. *Journal of Pediatric Orthopaedics*. 2017;1. ePub ahead of print.

Souder C, Newton PO, Shah SA, Lonner BS, Bastrom TP, Yaszay B. Factors in Surgical Decision Making for Thoracolumbar/Lumbar AIS. *Journal of Pediatric Orthopaedics*. 2017;37:e530-e5.

Souder CD, Roocroft JH, Edmonds EW. Significance of the Lateral Humeral Line for Evaluating Radiocapitellar Alignment in Children. *Journal of Pediatric Orthopaedics*. 2017;37:e150-e5.

Stepanovich M, Upasani VV, Bomar JD, Wenger DR. Advanced Containment With Triple Innominate Osteotomy in Legg-Calve-Perthes Disease. *Journal of Pediatric Orthopaedics*. 2017;37:563-9.

Striano B, Schaeffer EK, Matheny TH, Upasani VV, Price CT, Mulpuri K, et al. Ultrasound Characteristics of Clinically Dislocated But Reducible Hips With DDH. *Journal of pediatric orthopedics*. 2017;1. ePub ahead of print.

Sullivan TB, Bastrom T, Reighard F, Jeffords M, Newton PO. A Novel Method for Estimating Three-Dimensional Apical Vertebral Rotation Using Two-Dimensional Coronal Cobb Angle and Thoracic Kyphosis. *Spine deformity*. 2017;5:244-9.

Sullivan TB, Bastrom TP, Marino N, Edmonds EW. Presenting features of extremity necrotizing fasciitis in the pediatric patient: a case-control analysis. *Journal of pediatric orthopedics Part B*. 2017;1. ePub ahead of print.

Sullivan TB, Reighard FG, Osborn EJ, Parvaresh KC, Newton PO. Thoracic Idiopathic Scoliosis Severity Is Highly Correlated with 3D Measures of Thoracic Kyphosis. *The Journal of bone and joint surgery American volume*. 2017;99:e54.

Upasani VV, Birke O, Klingele KE, Millis MB. Iatrogenic Hip Instability Is a Devastating Complication After the Modified Dunn Procedure for Severe Slipped Capital Femoral Epiphysis. *Clinical Orthopaedics and Related Research*. 2017;475:1229-35.

Veljkovic AN, Sewell MD, Mears SC, Edmonds EW. The 2016 Austrian-Swiss-German Fellowship. *The Journal of Bone and Joint Surgery*. 2017;99:e10.

Wall EJ, Milewski MD, Carey JL, Shea KG, Ganley TJ, Polousky JD, Grimm NL, Eismann EA, Jacobs JC Jr, Murnaghan L, Nissen CW, Myer GD, Weiss J, Edmonds EW, ROCK Group, et al. The Reliability of Assessing Radiographic Healing of Osteochondritis Dissecans of the Knee. *The American Journal of Sports Medicine*. 2017;45:1370-5.

Yaszay B, Bastrom TP, Bartley CE, Parent S, Newton PO. The effects of the three-dimensional deformity of adolescent idiopathic scoliosis on pulmonary function. *European Spine Journal*. 2017;26:1658-64.

Yaszay B, Doan JD, Parvaresh KC, Farnsworth CL. Risk of Implant Loosening After Cyclic Loading of Fusionless Growth Modulation Techniques. *SPINE*. 2017;42:443-9.

Yaszay B, Sponseller PD, Shah SA, Asghar J, Miyanji F, Samdani AF, Bartley C, Newton PO. Performing a Definitive Fusion in Juvenile CP Patients is a Good Surgical Option. *Journal of Pediatric Orthopaedics*. 2017;37:e488-e91.

Zogby AM, Dayanidhi S, Chambers HG, Schenk S, Lieber RL. Skeletal muscle fiber-type specific succinate dehydrogenase activity in cerebral palsy. *Muscle & Nerve*. 2017;55:122-4.

Pennock AT, Edmonds EW, Bae DS, Kocher MS, Li Y, Farley FA, et al. Adolescent clavicle nonunions: potential risk factors and surgical management. *Journal of shoulder and elbow surgery*. 2018;27:29-35.

Sullivan TB, Bastrom TP, Bartley CE, Shah SA, Lonner BS, Asghar J, Miyanji F, Newton PO, Yaszay B. Selective thoracic fusion of a left decompensated main thoracic curve: proceed with caution? *European spine journal : official publication of the European Spine Society, the European Spinal Deformity Society, and the European Section of the Cervical Spine Research Society*. 2018;27:312-8.

Upasani VV, Jeffords ME, Farnsworth CL, Padilla D, Lopreiato N, Aruwajoye OO, et al. Ischemic femoral head osteonecrosis in a piglet model causes three dimensional decrease in acetabular coverage. *Journal of orthopaedic research: official publication of the Orthopaedic Research Society*. 2018;36:1173-7.



2018 saw the release of the 4th edition of *Rang's Children's Fractures* text book. Drs. Wenger, Pring, Pennock, and Upasani were co-editors of this edition. The remaining authors are all from RCHSD, and this text is a reflection of the RCHSD approach to the treatment of children's fractures.

Spreading the Word – Global Outreach

Each year, our orthopedic staff are asked to lecture as visiting professors and to present papers at conferences throughout North America and the world. The images below demonstrate these experiences during the most recent academic year. Visiting other centers, and attending national and international conferences, greatly improves our ability to provide state-of-the-art teaching, patient care, and research.



All California meet up of former fellows at AAOS in New Orleans. Steven Frick (class of 98, Stanford), Megan Imrie (class of 2009, Stanford), and Eric Edmonds (class of 2008, RCHSD).



We had strong representation at the Orthopedic Research Society annual meeting this year with Dr. Rickert, Christy Farnsworth, Raghav Badrinath (UCSD Resident), and Alan Valdovino (UCSD Medical Student) all presenting their work.



Dr. Newton and Chinese colleagues. Dr. Newton was a guest professor at Wuhan Union Hospital this year.

Spreading the Word – Global Outreach



IHDI course in Mexico City at the ABC Medical Center. The course was sponsored by Pablo Castañeda and Carlos Vidal. Dr. Upasani and Dr. Martin Gargin were Visiting Professors for the course. September 2017.



APOS/POSNZ Global Course in Queenstown, New Zealand. Don Bae (Boston Children's), Lori Karol (TSRH), and Dr. Edmonds.



Time off in Park City, Utah during the Harms Study Group meeting in January. Mark Abel (class of 1989), Nic Fletcher, Stefan Parent (class of 2004), and Keith Bachmann (class of 2016).

Spreading the Word – Global Outreach



The class of 2012 once again made their annual trip to Ecuador. Each year Jake Schulz, Matt Schmitz, Eric Fornari, and Chris Bray meet in Ecuador for a week of service.



Invited Peds faculty for the Chinese Orthopaedic Association (COA). Inviter: Xuemin Lyu (Beijing), Stephanie Böhm (Sweden), Abby Allen (former fellow class of 2009, New York), Meghan Imrie (former fellow class of 2009, Stanford), Federico Canavese (currently Guangzhou), Manoj Ramachandran (London), Dr. Edmonds, Darko Anticevic (Croatia, current EPOS President).



3rd Dana Seminar Pediatric and Adolescent Sports Injuries Treatment and Rehabilitation in Tel Aviv, Israel. Mike Busch (Atlanta), Dr. Edmonds, Muki Yaniv (Tel Aviv - host), Franck Chotel (Lyon France), Clift Willimon (Atlanta), Joe Seibel (HSS), and Dror Ovadia (Tel Aviv - chairman)

Spreading the Word – Global Outreach



POST (Pediatric Orthopedics Surgical Techniques) 2nd Annual meeting in Memphis – September 2017. Faculty members hold an open forum to discuss fellowship and career development – left to right: Chris Iobst, Jeff Sawyer, Derek Kelly, Ferg Monsell, Steve Frick, Eric Edmonds, Christine Ho, Lucas Murnaghan, Todd Milbrandt, Eduardo Novais, Nick Fletcher, Todd Ritzman



58th AOA (American Osteopathic Academy of Orthopedics) Postgraduate Seminary. Three past fellows, John Schlechter (class of 2008), François Lalonde (class of 1999), Eric Edmonds (class of 2008).



Ernie Sink (Hospital for Special Surgery, NYC, class of 2000) and Dr. Wenger taking a brief tour while attending the European Pediatric Orthopedic Society meeting in Oslo (April 2018). Dr. Sink was a former NCAA skier at the University of Colorado.



The PARS (Pediatric Academic Research Society) met in Phoenix (January 2018). Pictured above are Dr. Wenger with five previous fellows: G. Gantsoudes (Fairfax, VA, class of 2010), R. Lark (Duke U., class of 2010), Dr. Wenger, K. Bachmann (U. Virginia, class of 2016), R. Goodwin (Cleveland Clinic, class of 2004), and R. Liu (Case Western Reserve, class of 2010).

Rady Children's

Hospital
San Diego



1955



1993



2010



Rady Children's Hospital – Through the Years