

# Connections 2016

A Newsletter from the Children's Orthopedic and Scoliosis Training Program • Issue 12 – 2016

## Message from the Director

Spring has come and gone and we are completing another important academic year in our orthopedic teaching program here at Rady Children's Hospital San Diego /University of California San Diego. The year has been productive in many ways. Our orthopedic leadership team remains diversified with Dr. Peter Newton serving as the Director for the Orthopedic Division, Dr. Scott Mubarak serves as Surgeon in Chief for the hospital, and I direct the Orthopedic Training Program. Our strong leadership team gets administrative direction from David Pyatt who is Director of Operations – Orthopedics, and Rehab Medicine with clinic coordination coming from Mrs. Joan Morgan, BSPT, Manager of the Orthopedic and Rehab Medicine Clinics. We have 10 children's orthopedic surgeons as well as 12 physician extenders (nurse practitioners / physician assistants).

The training program remains the central focus of our mission and



includes 5 residents on rotation at any one time who come from UCSD, the San Diego Naval Medical Center, and the San Antonio Military Medical Center. Dr. Maya Pring organizes and supervises the resident training program.

We also have our standard compliment of four clinical fellows who are extremely active both clinically and in research. We just completed our fellowship match for the August 1, 2017 arrival fellows and once again recruited an outstanding class. We ranked at the very top of our matching list and one reason for this is that our

program allows fellows to take supervised but independent call. Thus in addition to their extensive training in clinical children's orthopedics and scoliosis surgery, our fellows also learn to be "real doctors" by taking night call followed by independent follow-up clinics for their patients. This is of extraordinary value, providing graded responsibility, which prepares them for the practice of children's orthopedic surgery.

Our fellows quickly get practice positions and almost always by mid-fellowship year they are "signed up" for their first practice "job." Our fellows are hired quickly because both academic and private practices are looking for children's orthopedic surgeons who have had a broad education that includes not only responsibility for caring for patients, and learning surgical techniques, but also performing research.

Our research program continues to be extremely active with 50

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Mubarak



Newton



Chambers



Newton



Wallace



Pring



Yaszay



Edmonds



Pennock



Upasani

# Message from the Director -cont'd

papers published over the past academic year. In addition, our staff physicians and fellows have presented their papers at the important children's orthopedic and scoliosis meetings throughout North America and the world. Our fellows are key to producing this research and each year they complete one, two, or even more academic papers that are published in orthopedic journals.

As a later section in this newsletter notes, our staff continue to travel throughout North America and the world as academic leaders and teachers who "spread the word" about advances in children's orthopedics. As a result, the Rady Children's Hospital San Diego pediatric orthopedic training program is one of the best known in the world. Due to the high quality of our surgeons, we are also a center where children are referred to from throughout the country and the world for orthopedic surgical care.

This is a special year for our fellowship program because 2016 represents the 30th year in which we have had children's orthopedic fellows at Rady Children's Hospital. This was noted at our annual Visiting Professorship and also was a reason for the celebratory flavor at our fellow alumni event at the Pediatric Orthopedic Society of North America (POSNA) meeting in Indianapolis in May. A large number of our prior fellows attended to celebrate our lengthy experience in training children's orthopedic surgeons.

The David Sutherland Visiting Professor program brought Dr. John Herzenberg from Baltimore, who is the Director of the International Center for Limb Lengthening at the Rubin Advanced Skeletal Institute at the Sinai hospital in Baltimore, to San Diego for a very instructive professorship (See later section).

Certain of our staff have had several honors this year including Dr. Eric Edmonds who was selected as the Austrian-Swiss-German traveling fellow by the American

Orthopedic Association. Other academic honors included Dr. Dennis Wenger being selected to deliver the annual Harrington Lecture for the 50th anniversary meeting of the Scoliosis Research Society in Minneapolis in September 2015. Our program also received special focus at the Pediatric Orthopedic Society of North America (POSNA) meeting in Indianapolis in May of 2016 with Dr. Salil Upasani being awarded the St. Giles Young Investigator Award for 2016. Finally, Dr. Wenger was presented with the 2016 Distinguished Service award at the POSNA meeting in Indianapolis (see later section).

Over the next academic year, our orthopedic team will be switching gears and moving to new academic office quarters here on the Rady Children's Hospital campus. As most of you know, we have occupied a good portion of the fourth floor of the Medical Office Building (MOB) here at 3030 Children's Way for the last 25 years. This was a specific office designed by medical building architects to allow both ideal private patient care as well as academic activities and has served us wonderfully. This space is now needed to expand the clinical care capacity of the hospital as a whole and so it will be redesigned and used entirely for clinics. The hospital has built a new Education Office Building (EOB) on the campus (near where our gait lab and gait lab teaching conference is located) which will house all of the medical and surgical specialists for children's hospital and we will move in by late 2016.

Please enjoy the contents of this issue and we look forward to our continued professional association.

Dennis R. Wenger, M.D.  
Director – Orthopedic Training Program



University of California, San Diego

*All knowledge is of itself of some value. There is nothing so minute or inconsiderable that I would not rather know it than not.*

– Samuel Johnson



## Rady Children's Hospital **Ranked #4!**



### Rady Children's Hospital

San Diego, CA

 **#4 in Children's Orthopedics Hospitals**

Rady Children's Hospital in San Diego, CA is nationally ranked in 9 pediatric specialties.

The US News and World Report magazine makes an important contribution to consumer perception of medical quality in North America by publishing an annual national ranking of medical institutions. This includes ranking children's hospitals in the U.S.A. and, more importantly for us, ranking children's orthopedic programs. In addition to standardized quality measures, the ranking also includes the opinions of other academic leaders in children's orthopedics. We are happy to note that the Rady Children's Hospital/UCSD orthopedic training program was ranked #4 in the nation for the 2016 ranking.

Although our program is not driven by media oriented "popularity contests", we are happy for the recognition. From the beginning, we have made a concerted effort to have a balanced program focused on patient care and surgery quality, teaching and research. This has been hard work for all, and reflects the combined energy and effort of our orthopedic team. Finally, we are fortunate to work within a hospital that is highly functional with an outstanding medical and nursing staff.



**RCHSD Orthopedic Surgeons**



**Orthopedic Nurse Practitioners and Physician Assistants – RCHSD**

# 2015 - 2016 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. Recent national analysis of surgical training in North America suggests that more graded responsibility needs to be given to senior trainees and fortunately we have been able to incorporate this into our program. We are proud of our fellows who are graduating this year and we congratulate them on their accomplishments.



**Keith Bachmann, MD**

Dr. Bachmann graduated from medical school at Virginia Commonwealth University and completed his residency at the Cleveland Clinic. During his time in San Diego his research studies included 3D analysis of syndromic scoliosis progression and the variability of management in acute surgical site infections. Upon completion of his fellowship he will be joining Mark Abel (former RCHSD orthopedic fellow) in an academic position at the University of Virginia Health System in Charlottesville, Virginia.



University of Virginia Health System



**Matthew Ellington, MD**

Dr. Ellington graduated from medical school at University of Texas Southwestern (Dallas) and took his residency at Scott & White Hospital (training with former RCHSD orthopedic fellow Chris Souder). He then came to San Diego for his fellowship where he has had a productive year. His research interests have included sports related subjects such as the reliability of our physical therapy return to sports test, as well as a study of the effectiveness of the Pavlik Harness in patients presenting at over six months of age. He has accepted a position at Dell Children's Hospital Medical Center of Central Texas in Austin (where he will work with with prior RCHSD orthopedic fellows, Tony Kahn and Hilton Gottschalk).



Dell Children's Hospital Medical Center of Central Texas



# 2015 - 2016 Fellows - Rady Children's Hospital



**Corey Fuller, MD**

Dr. Fuller earned his undergraduate degree in Biomathematics from La Sierra University in Riverside, CA and attended medical school at Loma Linda University School of Medicine. He continued as a resident in the Loma Linda Residency Program working under Scott Nelson (former RCHSD orthopedic fellow). Dr. Fuller rounded out his all-California education by matching with our program in San Diego and has been active with research including: torsional deformities of the lower extremities and the biomechanical analysis of various osteotomies used to treat lower extremity torsional deformities. After graduation, he will be returning to the orthopedic faculty of Loma Linda University Medical Center.



**David Lazarus, MD**

Dr. Lazarus graduated from medical school at the University of Tennessee in Memphis and completed his residency at Emory University in Atlanta, GA. While in San Diego his research included the rate of underlying pathology in patients the present with bilateral hip dislocations and torsional growth modulation of long bones using oblique plating in a rabbit model. Following his fellowship Dr. Lazarus will move to Greenville, SC where he has accepted a position at the Greenville Hospital System University Medical Center where he will join an orthopedic group that includes Chris Bray (former RCHSD fellow).



Loma Linda University Medical Center



Greenville Hospital System University Medical Center

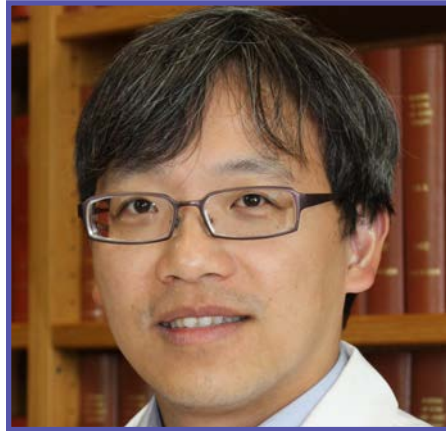
# 2015 - 2016 International Fellows

## International Fellows

Because of our growing national and international influence 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:



**Wataru Saito, MD**  
Spine (Intl.)  
Tokyo, Japan  
April 2015 – March 2016



**Kuan-Wen Wu, MD**  
Spine (Intl.)  
Taipei, Taiwan  
September 2015 – March 2016



**Yi Yang, MD**  
Spine (Intl.)  
Melbourne, Australia  
February 2016 – July 2016



**2015-2016 Clinical and International fellows**



# Arriving Fellows - 2016-2017

The process of applying, interviewing, and being accepted for one of the top-ranked fellowship programs in children's orthopedics is a demanding process. Each year we receive 40-50 applications and narrow this 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, 2016 to begin their academic year. These are outstanding young orthopedic surgeons from throughout North America and we look forward to working with them.



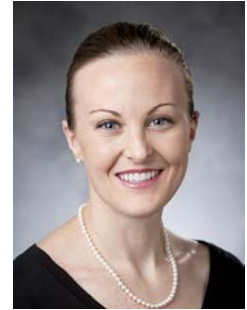
**Daniel Bland, MD**  
(University of Texas Southwestern)



**Jaysson Brooks, MD**  
(Johns Hopkins)



**Ryan Fitzgerald, MD**  
(Akron General Medical Center)



**Kathleen Rickert, MD**  
(Duke University)

## **Daniel Bland, MD**

Undergrad: Bachelor of Science in Engineering, Baylor University, Waco, TX  
Medical School: Duke University School of Medicine, 2011  
Residency: University of Texas Southwestern, Dallas, TX

## **Jaysson Brooks, MD**

Undergrad: Bachelor of Science in Biology, Oakwood University, Huntsville, AL  
Medical School: Loma Linda University School of Medicine, 2011  
Residency: Johns Hopkins, Baltimore, MD

## **Ryan Fitzgerald, MD**

Undergrad: Bachelor of Science in Integrative Biology, University of Illinois, Urbana-Champaign, IL  
Medical School: University of Illinois College of Medicine, 2011  
Residency: Akron General Medical Center, Akron, OH

## **Kathleen Rickert, MD**

Undergrad: Bachelor of Science in Molecular and Cellular Biology, University of Arizona, Tucson, AZ  
Medical School: University of Arizona, 2011  
Residency: Duke University, Durham, NC

## ***“Future Stars – 2016 Match” (for 2017-2018 Academic Year)***

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

**Rutledge “Carter” Clement, MD**  
University of North Carolina

**Joshua Holt, MD**  
University of Iowa Hospitals and Clinics

**Craig Louer, MD**  
Washington University

**Julia Sanders, MD**  
University of Colorado

## POSNA 2016

### *Special Honors*

#### **POSNA 2016 – Distinguished Service Award**

##### **Dr. Dennis Wenger**

Dr. Dennis Wenger, director of the orthopedic training program at RCHSD was given the POSNA Distinguished Service Award at the POSNA (Pediatric Orthopedic Society of North America) meeting in Indianapolis (April 2016). This is given annually to a member of the POSNA who has made significant contributions in the field of children's orthopedics. The award was presented by Dr. Lori Karol, POSNA president, and included a plaque with the following inscription:

**The Pediatric Orthopaedic Society of North America  
2016 Distinguished Achievement Award is Presented to:**

**Dennis R. Wenger, MD**

**2016 Annual Meeting, April 27-30, 2016, Indianapolis, Indiana**

**“For his ground-breaking work in Hip Dysplasia, SCFE, and Perthes Disease**

**For Authorship of ‘Children’s Orthopaedics in North America – History, Genealogy, and Evolution’**

**For his enthusiastic participation as a thought leader at POSNA annual meetings**

**For his excellence in teaching fellows and residents in Pediatric Orthopaedics at The Rady Children’s Hospital  
University of California, San Diego, California”**



**Dr. Wenger responds to receiving award**



**Dr. Lori Karol, POSNA president presents award**

Dr. Wenger has published several textbooks in children's orthopedics and many papers in the orthopedic literature. In addition he was the co-founder of a fellowship in children's orthopedics at Texas Scottish Rite Hospital in the mid-80's before coming to San Diego where he directs the renowned children's orthopedic fellowship at Rady Children's Hospital San Diego/University of California San Diego.

#### **POSNA 2016 – St. Giles Award**

##### **Dr. Vidyadhar Upasani**

At this year's 2016 POSNA meeting in Indianapolis, our orthopedic training program received two outstanding awards which were also celebrated at our alumni event. Dr. Salil Upasani, a junior colleague, who trained here in San Diego and then had his fellowship in Boston, is fast becoming a nationally recognized expert in hip disorders in childhood and adolescents. Dr. Upasani was awarded the 2016 St. Giles Young Investigators Award, which is annually given to a young POSNA member who has the best research potential that will assure the future of our specialty. We are happy to announce that Dr. Upasani was given the 2016 POSNA St. Giles Young Investigators Award which includes a monetary prize that is applied to a specific research project. Dr. Upasani's study is entitled "The Effects of Intra-Capsular Pressure on Femoral Head Perfusion: a Porcine Model".





# The Center for the Future of Surgery

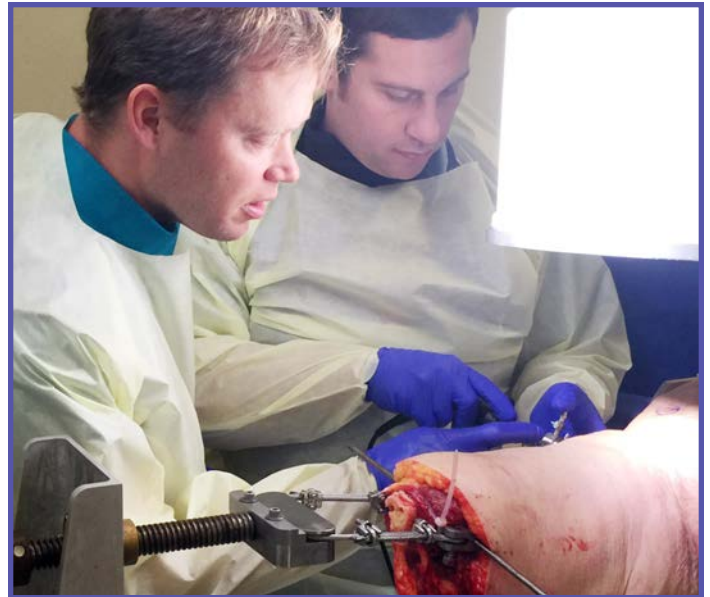


Being affiliated with the University of California San Diego Medical Center provides many opportunities for us. First, the UCSD orthopedic training program, directed by Professor Steve Garfin, is one of the most distinguished in the world in producing both basic science and clinical orthopedic surgery research. The residents from the program have an outstanding academic scientific base since they take a required year off from clinical training during their residency to pursue research and the scientific method.

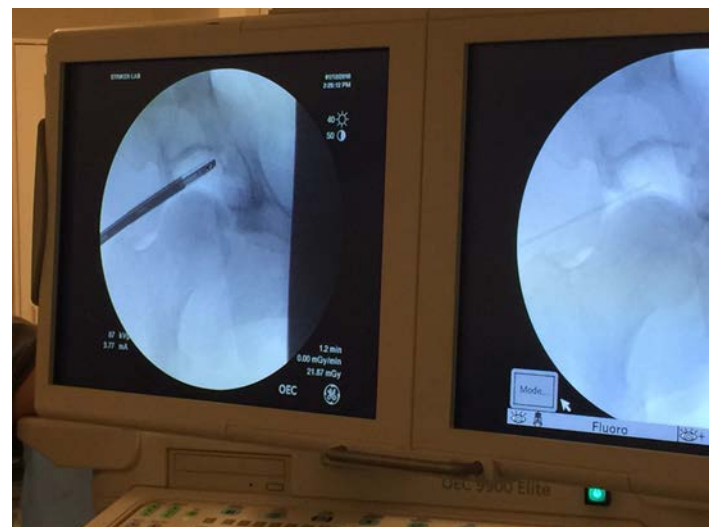
UCSD's plan for the future in all their surgical departments/divisions is to develop futuristic methods for treating patients using computer navigation, 3D modeling, robotic surgery, etc.

As a part of this goal the Center for the Future of Surgery, developed on the UCSD campus in 2013, provides a center for training of surgeons from all specialties. Recently Dr. Andy Pennock, one of our sports medicine/hip experts, organized a short course for orthopedic residents and fellows utilizing the facilities of the Center for the Future of Surgery. The attached photographs demonstrate this extraordinarily valuable session which allowed our residents and fellows to master techniques for hip arthroscopy utilizing fresh cadaver specimens as well as the latest implants and technology provided by Stryker as well as high quality image intensifiers. We are happy to have this facility available to us which allows our surgical trainees to learn on a local campus methods and techniques which often are only available at national training centers (Chicago).

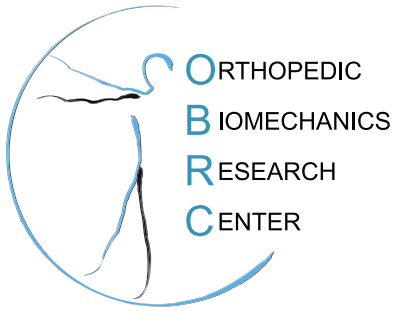
## THE CENTER FOR THE FUTURE OF SURGERY



**Teaching hip arthroscopy – Dr. Pennock (staff – left) and Dr. Ellington (fellow)**



**Having the image intensifier makes learning authentic – Note distracted hip**



## OBRC and Translational Research Year in Review

*Christine Farnsworth, MS*  
*Megan Jeffords, MS*  
*Josh Doan, MEng*

The OBRC and Translational Research Center continues to live out its mission to **complement and advance clinical decision making and the understanding of orthopedic problems by applying sophisticated analytical techniques incorporated from multiple disciplines.** In all, seventeen podium and poster research presentations were produced and presented at various national and international meetings over the past year.

**Three-dimensional** hip morphology changes with growth was studied in a porcine model and these parameters used to analyze acetabuli in a porcine model of Perthes. We investigated how to better understand the imaging of the lower extremity by comparing MRI, CT and EOS Imaging to determine femoral anteversion. The location of femoral osteotomy to treat anteversion was studied by comparing the rotation and mechanical axis changes at each level.



**3D Models of hip**

Collaborative work with the UCSD Departments of Bioengineering and Orthopaedic Surgery has enhanced our exploration of using patient-specific models for precision surgery as highlighted at Team Rady this spring. Rady employees from every department within the entire hospital were able to view a femur with Perthes, see a SCFE proximal femur before and after corrective osteotomies were performed, directly view a calcaneonavicular coalition and hold individual wedged vertebrae from a scoliotic spine. Such modelling carries the amazing potential to assist with surgical planning in multiple areas of interest (hip, spine, foot, etc.) and will help to move closer to our goal of using all tools possible to provide the best care for young and growing Orthopedic patients at Rady Children's Hospital.

We have settled into our current **Orthopedic Biomechanics Research Center (OBRC)** location which includes a separate machine shop and material testing lab spaces, with room for innovative people and projects. We are amazed as we watch the growth of Rady Children's Hospital with our front seat view of the new office building construction.



**Christy and Nik Marino (research volunteer) representing ortho at the Team Rady 2016 event.**

**Special thanks for a productive year go to:**

### **Nik Marino, BS**

Nik joined the Orthopedic Research team this year after graduating from Claremont McKenna. He enthusiastically worked to set up the 3D printing protocols, printed many "plastic bones," and participated in surgery, post-op care and x-rays for torsional growth modulation study. Best wishes to Nik as he heads off to medical school.

### **Jericho Hallare**

Jericho participated in a torsional growth modulation study with surgery, post-op care and x-rays. In addition, the bright and thoughtful UCSD Bioengineering junior is performing microCT and confocal imaging to allow sophisticated visualization of physes and cellular morphology in 3D.



## Research Team Year in Review

### *Tracey Bastrom, MA*

It was a pleasure to see many of you at the recent POSNA meeting in Indianapolis including many of our past fellows who presented at the podium and served on various panels. We had a record turnout for the Thursday evening reunion/award celebration/30th anniversary of the fellowship program. I really enjoyed catching up with everyone who was in attendance.

Just a few weeks after POSNA, we held our 43rd annual David H. Sutherland Visiting Professor program where our fellows did a fantastic job presenting the findings from their various research projects. We continue to focus our studies on a wide variety of pediatric orthopedic conditions and the program from this year's Visiting Professor highlighted this breadth of research topics. Topics from our fellows and residents included; torsional deformity correction, torsional deformity assessment, bilateral hip dislocations and underlying pathology, success of Pavlik treatment in subluxated/dislocated hips in patients over 6 months of age, reliability assessment of a return to sport test, many aspects of 3D spinal deformity analysis in various patient populations, SCFE treatment, recognition of necrotizing fasciitis and differentiating different types of tarsal coalitions.

The research department currently has 80 active studies open with the IRB, with another 19 pending approval. This is up from 70 active IRB approved studies at this time in the previous year. In 2015 our orthopedic staff co-authored 49 articles in peer reviewed journals.

Our department is dedicated to enhancing research knowledge at all levels of medical education. In addition to our orthopedic fellows, international fellows, and residents, last year our department mentored 7 UCSD medical students in various research projects to aid in fulfilling requirements for graduation and/or building a CV for residency programs.

Maintaining this highly productive research program requires significant effort from our attending staff, medical trainees, and our dedicated research team. We have 8 full time research employees devoted to clinical research responsibilities, 2 full time translational research staff, and a full time administrative assistant. We had a bit of staff transition this year and as a result have 3 new members on our team. Madeline Cross, MPH will be taking on coordination of 3D spine research, M. Morgan Dennis, BS will be assisting with sports and trauma research, and Megan Jeffords, MS has joined Christy as an engineer in the biomechanics lab/translational research realms. We're excited to have them all on board.



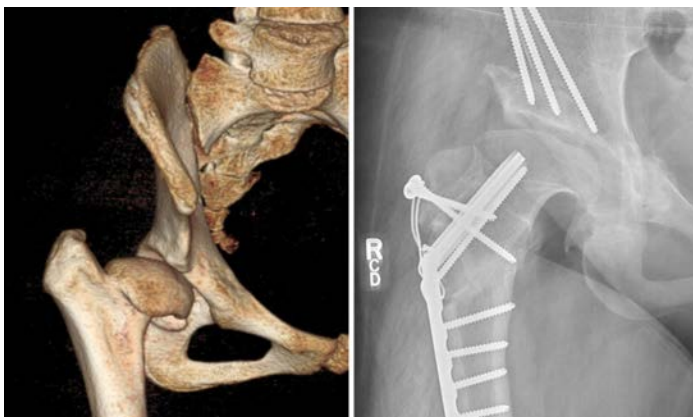
**Research team (L to R) – (back row) Carlo Munar, Morgan Dennis, Megan Jeffords, Carrie Bartley, JD Bomar. (front row) Joanna Roocroft, Christy Farnsworth, Tracey Bastrom, and Maddie Cross. Missing from photo – Aileen Laurent.**



## Hip Team Activities

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. Our team of surgeons is supported by nurses, physician extenders, orthopedic technicians, 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 Indianapolis.

Our center continues to grow as a referral source for complex patients from around the country as well as internationally. For example, we recently treated a patient from Santa Barbara who presented with worsening right hip pain and limp. Her radiographs demonstrated a severe coxa breva and magna proximal femoral deformity likely due to infant hip sepsis. She was treated with a Morscher procedure to improve the mechanics of the proximal femur as well as a periacetabular osteotomy (PAO) with osteochondroplasty to maintain joint congruity.



**Morscher procedure following infant hip sepsis**

Our hip team works closely with our pediatric sports colleagues to perform combined procedures. We are performing more combined hip arthroscopy and PAO procedures to first address intra-articular abnormalities followed by correction of the mechanical deformities that are often the root cause of the hip pathology (all done under one anesthesia).

Three dimensional (3D) print technology is now frequently used in our clinical practice to guide surgical treatments and for pre-operative planning. An example is that of a 2-year old female who developed a pathologic fracture and severe proximal femoral deformity after being treated for MRSA septic hip and femoral osteomyelitis. A mock surgery was performed on the 3D printed proximal femur to optimize deformity correction in all three planes. A mini-fragment locking plate was customized to fit the corrected 3D model and was sterilized for intra-operative use. These models are being used to plan surgical treatments in complex patients with slipped capital femoral epiphysis, hip dysplasia and Perthes disease.

Our hip research program continues to be an active member of various multi-center prospective study groups including the International Hip Dysplasia Institute (IHDI) and the International Perthes Study Group (IPSG). We also continue to invest heavily in our research department to prospectively collect subjective and objective outcomes data to try to improve our patient care. In addition to our Perthes and hip dysplasia patients, all patients being treated for femoroacetabular impingement and SCFE are also being closely followed prospectively and we hope to develop collaborations with other national and international hip centers to advance our management of these conditions.



**International Perthes Study Group**



# Sports Medicine for the Young Athlete



As with every year in San Diego, it has been a busy time for us. Year round sun (or more importantly, the continued lack of rain from the forecasted El Nino) and the endless outdoor opportunities keep the 360 Sports Medicine team on its toes. We are now into our fourth year, as a Center within our Division with leadership from both Hank Chambers and Eric Edmonds; although, the service remains anchored in our operative specialists: Andrew Pennock, Maya Pring and Doug Wallace, as well as our medical specialist: Kenneth Taylor, Suraj Achar, and Yu-Tsun Cheng.



The physical therapy side of our program continues to grow, both from a business standpoint and, more importantly, from an academic standpoint. The therapists designated to work at the flagship office for 360 are now engaged in research utilizing our motion analysis lab to evaluate surgical outcomes and validating return to sport tests for our patients.

We continue to be involved in several large multi-center prospective studies looking at osteochondritis dissecans of the knee (ROCK study group), adolescent clavicle fractures (FACTS study group), pediatric patellofemoral instability (PAPI study group), skeletally immature ACL injuries (PLUTO study group), and a new medial epicondyle fracture of the humerus study group that is just developing.

Along that line, our clinical research continues to be a focus of the 360 Sports program. Every year it becomes more difficult to differentiate sports research from trauma research and the last few years has seen a melding of the two research centers. This has stimulated some very interesting projects that have gone on to publication, as well as presentations at national meetings. Moreover, our group successfully moderated or participated in multiple symposium and ICLs at the AAOS annual meeting (2016) in Orlando.

Our accomplishments over the last year would not have been possible without the yeoman share being done by our fantastic team of nurse practitioners, physician assistants, clinical nurses, athletic trainer, and orthopedic technicians. We dedicate this successful year's accomplishments to them.

Hank Chambers just stepped down this year as the President of the Pediatric Research in Sports Medicine (PRISM) group, but at the same meeting, Eric Edmonds was elected to join the PRISM Board of Directors. We successfully hosted the 3rd annual meeting here in San Diego, which had the largest attendance thus far.



**Hank Chambers passes the gavel to Min Kocher (Boston Children's Hospital) who will be the President of the PRISM Sports Medicine Study Group**



## Scoliosis and Spine Deformity Center

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The scoliosis and spinal deformity program of Rady Children's Hospital continues to excel in the education, research and clinical treatment of pediatric spinal deformity. Created by Drs. Wenger and Mubarak, the active team is composed of Drs. Peter Newton, Burt Yaszay and Salil Upasani with involvement in Early Onset Scoliosis (EOS) from Drs. Behrooz Akbarnia and Gregory Mundis. Whether from the local community or travelling from out of state or country, patients continue to come to our institution to receive consultation or treatment ranging from traditional fusions to innovative methods including MAGEC rod instrumentation and spinal tethering.

On the education side, the monthly spine conference continues to educate the fellows, residents, and international fellows on the classification and treatment of adolescent idiopathic scoliosis (AIS). The conference has now been expanded to incorporate other pathologies including EOS, neuromuscular scoliosis and spondylolisthesis. Dr. Newton continues to be invited to travel the world teaching the latest and most innovative techniques in pediatric spinal deformity. Dr. Yaszay is following in this tradition, building up miles, teaching both national and internationally.

The Scoliosis Research Society (SRS) also recognizes the education being provided at San Diego. Dr. Wenger provided the Harrington lecture at the 50th Anniversary meeting of the SRS in Minneapolis. The SRS continues to send the International Travelling Fellows to spend time here during their 3 weeks visiting North American Spinal Deformity Centers. The value of this program is well understood as both Dr. Newton and Dr. Yaszay were both previous SRS travelling fellows.

On the research side, the San Diego spine team remains productive. Drs. Newton, Yaszay and Upasani will all be travelling to the SRS in Prague this year to present papers. A total of 10 abstracts including 9 podiums were accepted from San Diego. This doesn't include the dozens of other accepted abstracts that they were co-authors on. Dr. Newton will be presenting his clinical results on the spinal tethering system.

Understanding the 3D deformity of AIS continues to be a focus for the San Diego team. As the first children's hospital in America to have EOS Imaging, San Diego has one of the largest 3D databases for both preoperative and postoperative AIS. The information gained from this data will help us and others understand the etiology and, ultimately, the corrective techniques needed whether through growth modulation or traditional fusion. For example, we are learning the limits of posterior only surgery in correcting the apical thoracic lordosis seen in AIS. In some cases, restoring normal sagittal contours may require the spine to be shortened through an anterior fusion.

Clinically, the treatment and well-being of our patients remains the priority. With the addition of Dr. Upasani, scoliosis surgery is occurring 5 days a week at RCHSD. While idiopathic and neuromuscular scoliosis continue to be the most common problems treated, all pathologies from the skull to the sacrum are managed by the San Diego team.



**Drs. Newton and Yaszay guiding Drs. Bachmann and Ellington during the cadaver lab which occurred on day two of the annual Adolescent Spinal Deformity Tutorial (June 2016)**



## Orthopedic Leadership in Surgical Education and Research

*Scott Mubarak, MD*



The orthopedic surgery division continues to provide a strong leadership component within our hospital and medical foundation. Recognizing our orthopedic group's strong track record for education, patient care and research, Dr. Scott Mubarak was recently appointed as Surgeon in Chief for Rady Children's Hospital San Diego. He was asked to assume this leadership role because of his strong track record for education and research within the orthopedic division. One of his major goals will be to help our other surgical divisions in expanding their research programs.

We are happy to see orthopedics asked to provide this expertise which will benefit the entire hospital and are certain that all surgical divisions will mutually benefit from Dr. Mubarak's energetic approach to surgical research. As part of this effort, we attend surgery grand rounds on a frequent basis and our fellows now present their research projects near the end of the year at surgical grand rounds (as well as at our visiting professor program).

## 2016 Harrington Lecture – 50th Anniversary Meeting of SRS

*Given by Dennis Wenger, MD*

Each year the Scoliosis Research Society (SRS) selects a distinguished senior member to give the Paul Harrington Lecture. This lecture is given in honor of Paul Harrington, MD of Houston Texas, who is considered the founder of modern surgical correction of scoliosis using metallic implants. Dr. Harrington (Houston) started his research career first with animal studies and then in treating polio patients. He quickly adapted his methods to treat idiopathic scoliosis which quickly became the worldwide standard for scoliosis correction.

Dr. Dennis Wenger, director of the RCHSD orthopedic training program, was selected by Dr. John Dormans, (2015 president of the SRS), to present the 2015 Harrington Lecture. The lecture, entitled: "Correcting Scoliosis: The Genealogy of Ideas and Their Surgical Application," summarized the scientific evolution of the development of modern scoliosis instrumentation as seen by Dr. Wenger throughout his clinical and research years, first at the Texas Scottish Rite Hospital for Children and then here at RCHSD/UCSD.



**Dr. Wenger and Dr. John Dormans – SRS President**



**Work by Oldenburg and van Bruggen at Walker Museum of Art Center Sculpture Garden, Minneapolis**

# Our NP/PA Team

Our midlevel children's orthopedic provider team, one of the best in the world, started in 1999 with a single Nurse Practitioner (MaryLou Scott) and has now expanded to 12 members.

Our NPPA team serves a special role which is primarily outpatient clinic based. Each staff person has a midlevel provider attached to them, allowing the development of strong teaching-patient care teams. We, as of yet, do not have a midlevel provider assigned to the orthopedic floor, however, such an addition would be a great help for our busy residents and fellows.

Our midlevel providers see patients with their staff during the week, have many independent fracture and follow up clinics, as well as several subspecialty clinics (flatfoot, toe-ing-in, mild spinal asymmetry, ingrown toe nails, etc). They also rotate on evening ER call until 11:00pm supporting the resident who is on call to be sure our busy ER is properly staffed. This coverage also includes the reduction of fractures under conscious sedation when the resident is occupied or in the OR.

Midlevel team members are also active in academic activities and several of them have given lectures at the national orthopedic midlevel provider conference as members of the POPS group (Pediatric Orthopedic Practitioners Society).

We have only occasional turnover but because of the positive aspects of working in a children's orthopedic environment. In addition everyone loves to live in San Diego! The new members which have joined over the last academic year are noted in the attached photographs.

In clarifying the importance of our midlevel/surgeon team, yesterday we saw 264 patients in our outpatient clinic on the San Diego campus alone. This is during a time when many of our surgeons were in the operating room or had outlying clinics. Obviously without a fantastic and somewhat independent midlevel provider system, we couldn't come close to meeting our patient care needs. We are greatly indebted to our outstanding group of pediatric orthopedic midlevel providers.



**Our 2016 NP/PA Team – Now twelve Members!**



## RN/NP Recognition

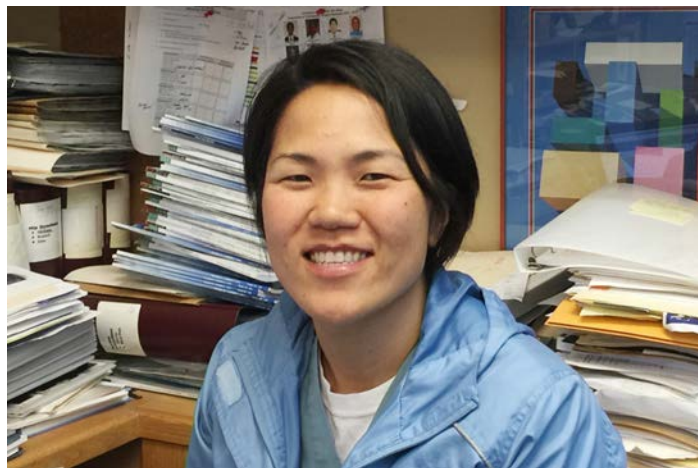
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*Amy Kager, RN and Sunny Park, CPNP*



**Amy Kager, RN**

Recently two members from orthopedic team were given hospital wide accolades at Rady Children's Hospital, San Diego. Amy Kager, RN, BA, the coordinator of the spine service, who serves as the clinic and orthopedic floor scoliosis nurse, was honored as the outstanding RN for the year at Rady Children's Hospital San Diego. Amy's close attention to all details of our multiple scoliosis clinics as well as following the patients and their families throughout their hospital, allows world class attention to all spine team patients, many whom come from throughout the United States and the world. We salute her for this honor and thank her for her "total dedication".



**Sunny Park, CPNP**

Sun Min "Sunny" Park, who is a Nurse Practitioner in our program and works primarily with Dr. Wenger and Dr. Pennock, was awarded the outstanding Nurse Practitioner award for the year at Rady Children's Hospital, San Diego. Her extraordinary efficiency in serving as both an educator and a high volume, skilled, patient care practitioner allowed her to win this deserving honor. Her intellect and speed in understanding all of children's orthopedics, allows her to present complex clinical cases (along with fellows and residents) at our teaching conferences. Her efficiency allows her to run large, independent fracture clinics with ease. We are very happy with the many physician extenders who work in our division and without their great skills we would not be able to function at the level we do.





## John E. Herzenberg, MD

*Director, Pediatric Orthopedics, Sinai Hospital of Baltimore,  
International Center for Limb Lengthening*

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May 20, 2016

Once again we had an outstanding internationally recognized children's orthopedic expert as our David Sutherland Visiting Professor (19 and 20 MAY 2016). Dr. John Herzenberg is recognized nationally and internationally for developing the Baltimore Limb Deformity and Lengthening Center at the Rubin Center for Advanced Orthopedics at Sinai Hospital, Baltimore. He has been an innovative leader in developing advanced technology to correcting limb deformity and we were honored to have him as our guest professor.

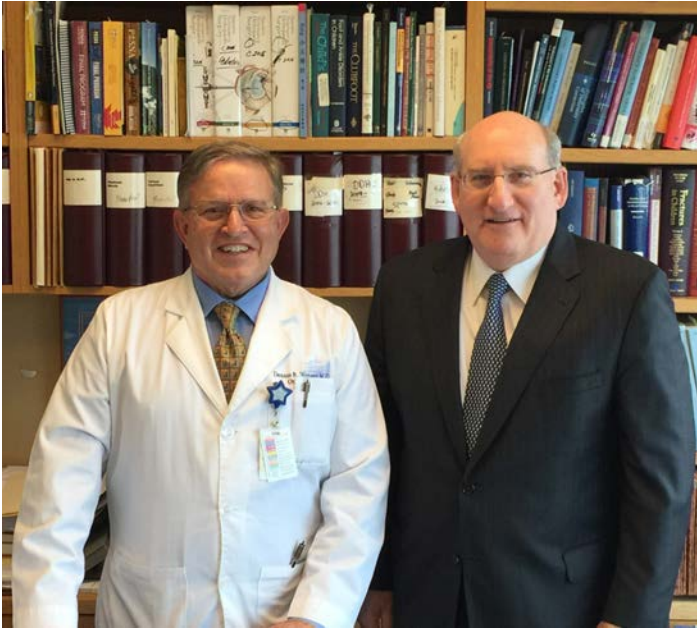
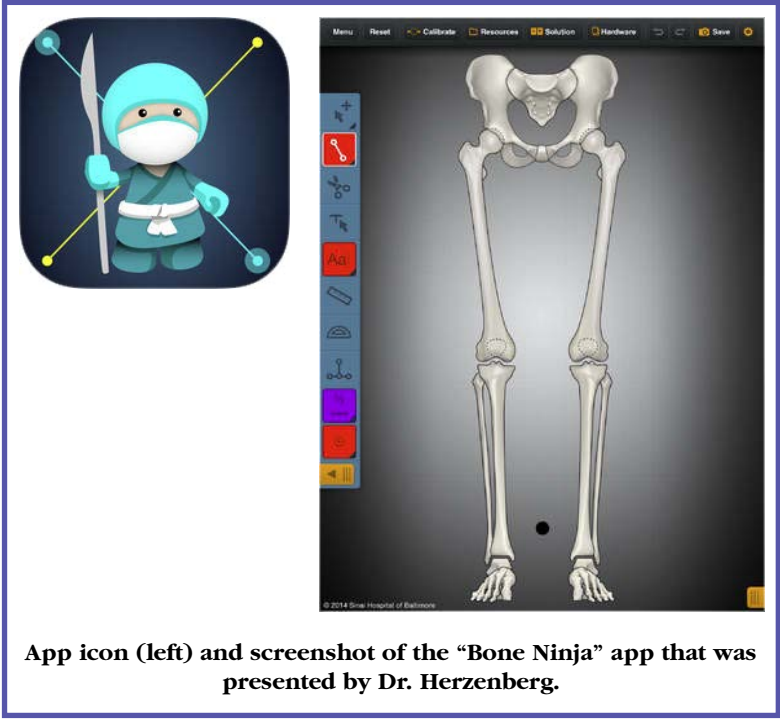
Dr. Herzenberg, born in Massachusetts, attended high school in Israel where he was working on a kibbutz. He then enrolled at Boston University both for undergraduate and medical school followed by a general surgery experience at Albert Einstein Medical Center in New York and an orthopedic residency at Duke University where he trained under both Leonard Goldner and James Urbaniak.

This was followed by a fellowship at the Hospital for Sick Children in Toronto for followed by 5 years of faculty experience at the University of Michigan working with Bob Hensinger. He was recruited to Baltimore to join the orthopedic faculty at the University of Maryland and while there developed a practice with Dr. Dror Paley and together they developed Baltimore as an international center for the correction of limb deformity in children and young adults. During this development he visited Kurgan, Russia to work with Dr. Gavriil Ilizarov, the world expert on graduated limb lengthening which does not require bone grafting or internal plates.

Dr. Herzenberg brought an immense body of knowledge and experience to the visiting professorship and provided great value for medical students, residents, fellows and others. His interactive presentations of the planning software that he has developed ("Bone Ninja," "Multiplier") were very instructive and introduced our residents/fellows to state-of-the-art methods of evaluating and treating limb deformities.







**Dr. Wenger with Dr. Herzenberg**

*We retain from our studies only that which we practically apply*

– Goethe

As usual we presented our many research papers and a stimulating series of complex cases which he discussed in an elegant manner. Once again, we learned a great deal and were exposed to many new ideas at the 2016 David Sutherland Visiting Professorship in Children’s Orthopedics.



**Sinai Hospital of Baltimore**

# Notes From Former Fellows

Editorial Note: Our annual “Notes from Former Fellows” is always a popular section in our newsletter and ordinarily features a single prior fellow. This year we decided to fea-

ture two fellows to illustrate the varying practice/teaching/research possibilities that our program prepares our fellows for. – DRW



## Adam Barmada, MD

*Private Pediatric Orthopedic and Scoliosis Practice – Portland, Oregon*

(Fellow – 2001-2002)

It's been fifteen years since I started my fellowship in San Diego in 2001. Reflecting back, that year was the most influential year in shaping my career and practice.

Growing up outside of Chicago, I attended medical school at the University of Illinois, Chicago - the same place my father headed the Department of Orthopedics for 15 years. I was not pushed hard to become an orthopedic surgeon but orthopedics was really the only specialty I seriously considered. My father was the perfect role model as he always acted with the utmost integrity, leading by example as he guided his department. It felt like a natural progression to follow in his footsteps though I felt compelled to train elsewhere and on my own merit.

Pediatric Orthopedics? I never would have guessed this as my career path when I started my residency at University of New Mexico in 1996. During my third year pediatric rotation, Dr. J. David Thompson was my most important influence in the decision to apply for a pediatric fellowship. Pelvic osteotomies and spinal deformity correction surgery were vastly different from the Level one trauma exposure that filled most of the first two years of my residency. More importantly, the children, their families, and relationships developed seemed like polar opposites to the majority of our trauma patient scenarios.

The decision to accept a fellowship and spend an extra year of training in San Diego was certainly one of the best of my career. I have always felt that the learning curve turned straight up, gaining as much knowledge and experience in one year as the five previous years of residency. San Diego was considered a "working fellowship", with more call duty than other programs but this was part of the appeal, in my opinion. Functioning as an attending on call was paramount in shaping my surgical confidence, competence, and decision-making. This was complemented by the incredibly



**2002 Fellowship Class**

strong academic program, didactics, and research support. I felt completely prepared to enter the next phase of my career, whether it be in academics or the private sector. Not only did I have the opportunity to work with some of the top people in their field, but also was allowed the autonomy to run my own call-based practice within an environment where instant help was available if needed - providing the perfect launch into a career in children's orthopedics.

Initially, my plan was to develop a niche as a pediatric specialist, but also continue a general adult practice. Dr. Mubarak and others said I would eventually drop the adult practice and they were correct. It has been interesting to recall the evolution of my practice as I rarely see adults other than the maturing adolescents that I treated earlier in my career.

Starting a career in private practice in a saturated city like Portland, I initially took ED call at three different hospitals and continued to treat adults, including level one trauma call. My pediatric practice initially included everything - trau-



ma, sports, upper and lower extremity, spine. My major interest was always spinal deformity and hip disorders - from cradle to grave. I felt that following patients from childhood through adult life would give a much better sense of the natural history of the diseases we treat and the effectiveness of our interventions. One lesson I have learned along the way - it is difficult to excel at everything. Realizing the time, effort, and stress involved in maintaining expertise across multiple sub specialties and generations of patients, I gradually limited my practice to children and adolescents.

After a year in private practice, I realized the business model in my particular group was not sustainable and opted not to become a business partner but continued to work with the same group, though becoming hospital employed. After another year, the other surgeons did the same, allowing the whole practice to be absorbed by Legacy Health Systems. Employment has its ups and downs, though overall, the benefits have far outweighed the drawbacks over the last 12 years. The importance of developing a strong relationship and communication with administration aids in the ability to practice with more autonomy.

The spine deformity experience in San Diego was (and continues to be) strong, Drs. Wenger and Mubarak were still performing scoliosis surgery and Dr. Newton's thoracoscopic practice was busy. Scoliosis treatment was trending toward primarily pedicle screw constructs. Several visits to St Louis with Dr. Lenke after leaving San Diego complemented my fellowship spine experience. Developing a career in spinal deformity essentially "from scratch" has taken some time which also makes it rewarding. Getting the hospital and operating rooms up to date with the latest technology in thoracoscopic spinal instruments, intraoperative spinal cord monitoring, and getting anesthesiologists on board took effort that appeared seamless during my fellowship.

Fourteen years later, I am now one of the "senior" members of my practice. It has been a pleasure bringing on new colleagues with different interests and training, bringing new perspectives, collaboration, and balance to the group. Working nearly exclusively at Randall Children's Hospital, one of only two full service children's hospitals in Portland, my current practice is heavy in spinal deformity and hip disorders along with ED call duties. I am fortunate to be able to teach and lecture to medical students, pediatric and family practice residents, local pediatricians and ED physicians, and occasional orthopedic residents looking for more pediatric experience. My main priority has always been the best patient care possible with strong, open, and honest family relationships. I am honored to have been voted by Portland metro physicians in Portland Monthly magazine as a "Top Doctor" on multiple occasions.

Having more partners and being freed up from most business burdens allows more time with my wife, Frances, and two daughters, Safia (10) and Maya (8). Portland is perfectly nestled between the mountains and the coast, providing us easy access for endless outdoor opportunities. Bicycling and steelhead fly fishing are pursuits that have encouraged travel to wonderful places in and out of Oregon. Commuting by bike up the hill to my home every day serves many purposes but perhaps most importantly helps clear the mind in preparation for the most important job as dad and husband.



**Barmada family**



**Trout fishing in Oregon**

I will always look fondly back at the days in San Diego - surfing and beach volleyball with my fellowship mates, days on the golf course with Dr Wenger, morning X-ray rounds, the wonderful support staff, the eclectic attending mix with comic relief, and the outstanding education. With all the new additions since I have graduated, the program appears even stronger while retaining the ever-present "main core". Thank you all for the experience!



## Stefan Parent, MD, PhD

*Academic Pediatric Orthopedic and Scoliosis Practice – Montreal, Quebec, Canada*

(Fellow – 2003-2004)

I was born the oldest of 5 children in a rural area of Quebec, Canada and grew up near Trois-Rivieres, Quebec which is located about half-way between Montreal and Quebec City. My mother was German and most of my family on her side still live in Germany. This led to several trips early in my life to visit my grandparents. To this day, I believe that was when and where I took an interest in traveling abroad.

I was an avid handball player (an intensive and moderate contact sport) and played at the elite level until my first encounter with orthopedics occurred: I suffered a torn right ACL that required reconstruction. I was very interested in this surgical specialty and always had an interest in Medicine. After returning to sports, I completed my high school years, went to CEGEP (College in Quebec) and finally entered medical school at McGill University. My goal was to become an orthopedic surgeon so I rotated in different services as part of my elective months and surgical rotations.

The orthopedic surgeon that performed my surgery knew a surgeon in Strasbourg, France and helped me organize a 1-month rotation there where I was assigned to both a spine and orthopedic trauma team. This was my first exposure to spine surgery and I soon realized that spine surgery would be part of my future career. I was impressed by the technical skills and precision involved in these interventions.



**Enjoying the Grand Canyon**



**Parent family**

I also developed an early interest in research with my first project a study of myocardial regeneration and the use of pluripotent satellite cells of skeletal muscles which included animal surgeries and immune-histology. I also had the opportunity to work with a neurologist in a study of the activities of a German pediatrician during the years preceding World War II and the Nazi regime. Dr. Werner Catel had been involved in the early years of a euthanasia program for children that eventually led to the Holocaust. I visited the State Archives in Leipzig, Germany and found evidence of his involvement in this program which was the subject of my first scientific paper.

I was accepted at Montreal University in the orthopedic surgery residency program and during my second year, I met Dr. Hubert Labelle who would play a vital role in my career development. Dr. Labelle rapidly realized that I had an interest in spine surgery, had a great motivation to do research and was openly interested in an academic career. I undertook my PhD work under the supervision of both Dr. Labelle and Prof. Jacques de Guise, an engineer interested in 3D reconstruction of the spine. My thesis was on the “Morphometric Analysis of Anatomic Scoliotic Specimens” and led me to visit two major osteological collection, the Hamann-Todd Collection in Cleveland and the Terry Collection at the Smithsonian in Washington, DC. We identified 30 anatomic specimens with scoliosis and were able to establish a deformity pattern for scoliosis.





**Oliver and Mathilde**

I presented these results at several meetings including the Scoliosis Research Society on several occasions and our work was nominated for the Hibbs award. At another meeting where I presented the results of this study, I met Dr. Peter Newton who was our guest speaker for the Quebec Scoliosis Society. He presented the results of thoracoscopic instrumentation for scoliosis and I was impressed with this new technique. I approached Dr. Newton about doing a pediatric orthopedic fellowship in San Diego and was accepted as the first Spine Pediatric Orthopedic fellow in San Diego. My “fellow colleagues” for this unforgettable year were Jay Albright, Ryan Goodwin, Michael Rohmiller and Sohrab Gollogly (for the last 6 months of the year). The year spent in San Diego was a turning point in my career. I learned to master new surgical skills but was also exposed to an environment where world-class academic achievements were not only recognized but nurtured. It was also the year when I applied to become a member of the Scoliosis Research Society and received my first grants as a Principal Investigator. I have kept special ties with the San Diego group and especially Peter Newton over the years as my academic career blossomed.

I then did a second year of fellowship in Paris at Saint-Vincent de Paul Hospital under the supervision of Dr. Reinhard Zeller and concurrently pursued work as a post-doctoral fellow at École Nationale Supérieure des Arts et Métiers in Paris under the supervision of Wafa Skalli.

I then returned to Ste-Justine Hospital in Montreal where I became a surgeon-scientist dedicating my practice to the treatment of spinal deformities in children. I have protected time for research as I have salary support from both the University and the Quebec Government. I have received



**2015 SRS Traveling Fellows (in Asia)**

continuous funding for research since 2005 from different funding agencies including the Canadian Institutes of Health (CIHR), the Natural Sciences and Engineering Council of Canada (NSERC), the Canadian Foundation for Innovation (CFI), OREF, NIH, POSNA, and SRS. My main research interests are focusing on the prediction of scoliosis progression based on the initial 3D assessment of the deformity and fusionless scoliosis correction. I have authored or co-authored over 100 papers since 1998 and hold 14 patents.

In 2013, I was named director-at-large of the Board of Directors of the Scoliosis Research Society for the under 45-year-old position. I also had the opportunity to be a Traveling Fellow of the SRS in 2015 with Burt Yaszay (San Diego) and Patrick Cahill (Philadelphia). Our mentor was Dr. Behrooz Akbarnia (also from San Diego). The trip took place in Asia where we visited multiple centers that were led by internationally recognized surgeons.

On a more personal note, I am married to a wonderful, kind and understanding wife, Christiane Lynch, who is very supportive of my academic career and we are the very proud parents of two wonderful adopted children from South Korea. Mathilde and Olivier just turned age 7 and 9 years respectively. They are full of energy and make our lives complete. I have very fond memories of my time in San Diego and will always be extremely grateful for the lessons and teaching learned during my years there.



**2004 Fellowship Class**

# Former Fellows Give Back in Ecuador



## Class of 2012

### *Former Fellows Give Back*

**2012 Fellowship Class – (L to R) J. Schulz, E. Fornari, C. Bray, M. Schmitz**

This past October, four Rady “fellowmates” travelled from the U.S. to Ecuador to give much needed pediatric orthopaedic care to the local population. Matt Schmitz (San Antonio, TX), Jacob Schulz (New York City), Eric Fornari (New York City) and Chris Bray (Greenville, SC) spent a full week at the Hospital de Ninos, Roberto Gilbert in Guayaquil, Ecuador. These four graduated from Rady in 2012 and relished the opportunity to work closely together again for the benefit of children with musculoskeletal disorders in Ecuador.

The four former fellows were joined by 4 anesthesiologists and 18 other volunteers from around the U.S. including nurses, technicians and non-clinical support staff, in a trip sponsored by Project Perfect World (PPW). PPW is a non-profit organization focused on delivering high quality pediatric orthopaedic care and education to the patients and physicians at the Robert Gilbert Children’s Hospital. PPW works to secure funding for the trip and works with the local government authorities to ensure the trips run smoothly and safely. Matt Schmitz served as the surgical team leader as this was his 3rd consecutive year to travel to Guayaquil with PPW. In 2013, he travelled with Dr. Maya Pring, and Rocky Sanchez, PA-C of RCHSD on the trip and in 2014 was accompanied by Dr. Jake Schulz and Rocky. Jake and Matt recruited the two other fellows from their class and thought it would be a great idea for them all to use the trip as a working reunion.

In total, the group performed 25 surgical cases in one week. They saw nearly 100 patients in clinic on Sunday and arranged the surgeries for Monday through Friday of the next week. The most common conditions treated included developmental dysplasia of the hip (11 open reductions and osteotomies for DDH during the week). A variety of other conditions were treated including residual clubfoot, arthrogryposis, osteogenesis imperfecta, and SCFE. The four fellows were a bit optimistic in their scheduling for the week (apparently the turnover time is a bit slower than they were accustomed to) and ended up operating past midnight on a few nights. They used two ORs throughout each day and paired off to assist each other with the cases.



**Orthopedic surgery in Guayaquil, Ecuador – Oct. 2015)**

A secondary mission of the trip was medical education. The fellows invited the local orthopaedists and residents into the OR to teach them about the surgical procedures and techniques they learned while at RCHSD. In addition, local medical students served as translators for the group and were allowed to scrub in and assist on the cases. Eric Fornari used his bilingual skills to deliver a lecture to local medical students and residents on early detection and non-invasive treatment of DDH in hopes that the overwhelming numbers of children with untreated DDH can be lowered.



# Former Fellows Give Back in Ecuador



**2015 “Working Reunion” for 2012 Fellows**

Matt, Jake, Eric and Chris hope to make the annual pilgrimage a recurring event. It proved to be a wonderful experience, performing challenging cases with close friends that don't get to see each other on a regular basis. The fellows did have a chance to relax on the last day in town with a relaxing dinner together before travelling back to their respective corners of the U.S.

If you would like to consider a tax deductible donation to Project Perfect World to help offset the cost of this trip, please contact Matt Schmitz at [MattRSchmitz@gmail.com](mailto:MattRSchmitz@gmail.com)



**A happy patient – Ecuador**



**Post-op – Mother and daughter – Ecuador**



**“A little TV coverage always helps” – Ecuador**

## The RCHSD/UCSD Fellowship Program

This was an extraordinary year for our fellowship training program that celebrated the 30th anniversary of the arrival of our first fellow (1986).

Dr. David Sutherland started the educational program at Children's Hospital – San Diego in the early 1970s and expanded to three staff members in the mid-1980s when Dr. Dennis Wenger joined him and Dr. Scott Mubarak (who was already here in San Diego working with Dr. Sutherland). Soon after Dr. Wenger's arrival, it was decided that a fellowship in children's orthopedics should be started with Dr. Sutherland encouraging the development since there were now three academically oriented faculty in the group. Our first fellow was Dr. James Bowler (1986) followed by Reid Abrams (now UCSD), and Mark Abel (now University of Virginia) and Chris Sullivan (now University of Chicago).

Since that time 92 clinical fellows have been trained in our clinical fellowship training program which allows the fellows to get a California medical license, take independent call, and develop high level specialty skills before they begin their completely independent practice. These fellows are listed below and listed by their graduation group.

In addition, scores of international fellows have studied with us during that time and although they gain clinical knowledge, they are also prolific researchers. Our clinical fellows also have an extraordinary research responsibility, which has led to multiple publications, as well as starting many of them into an academic careers (see note from prior fellows section).

### 1986 – 1999



J. Bowler      R. Abrams      C. Sullivan      M. Abel      E. Elmer      H. Chambers      F. Valencia      J. Davids



L. Benson      D. Kim      M. Moran      R. de Swart      D. Wallace      R. Stefko      S. Beck



C. Comstock      J. Cardelia      K. Rathjen      A. Kahn      C. Kim      G. White



K. Shea      N. McNerney      S. Frick      F. Lalonde      G. Hahn      L. Meyers      M. Elliott



# 30 Years of Fellows

## 2000 - 2008



A. Aminian

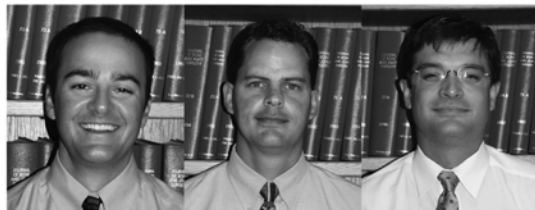
D. Scher

E. Sink

P. Wilson

S. Early

W. Yassir



A. Barmada

D. Brown

T. Oswald



G. Shapiro

J. Tis

M. Pring

S. Nelson



J. Albright

S. Gallagly

R. Goodwin

S. Parent

M. Rohmiller



M. Adamczyk

R. Capelo

S. Kishan

S. Van Valin



A. Baitner

F. Miyanji

P. Patel



T. Bloom

C. Caltoun

T. Ritzman



E. Edmonds

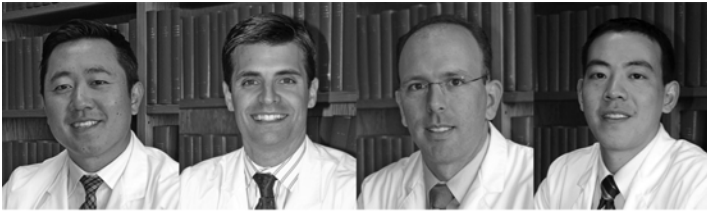
P. Henderson

J. Schlechter

V. Swaroop

# 30 Years of Fellows

## 2009 – 2016



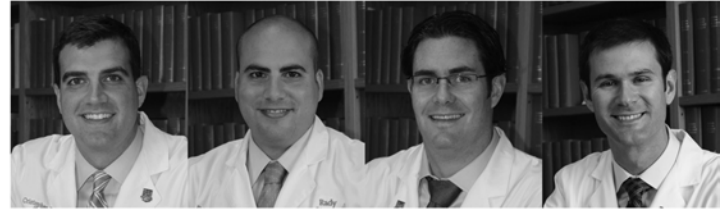
B. Cho      G. Gantsoudes      R. Lark      R. Liu



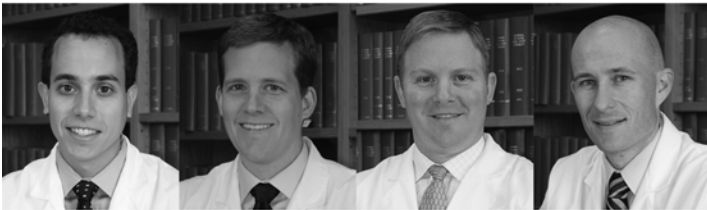
H. Guzman      M. Imrie      A. Lynn      A. Rozansky



E. Eisner      H. Gottschalk      R. Ilgenfritz      N. Pandya



C. Bray      E. Fornari      M. Schmitz      J. Schulz



A. Joffe      J. Kempainen      B. Scannell      C. Souder



J. Peterson      L. Phillips      L. Salgueiro      M. Hollenbeck



I. Ahmed      J. Murphy      M. Stepanovich      A. Pytiak



D. Lazarus      K. Bachmann      M. Ellington      C. Fuller



**Prior fellows helping us celebrate our 30th anniversary  
A national meeting is sometimes a good place to relax.**

Thus 2016 is the 30th anniversary of our fellowship program and we celebrated this happy event during the POSNA meeting in Indianapolis where a large percentage of the prior fellows attended our alumni event. We currently are considered among the top 3 fellowships in North America (which means in the world since pediatric orthopedic fellowships are not as firmly established in other continents). We are very proud of our track record and continue to provide an outstanding opportunity for patient care education and research in our training program.



## POSNA Annual Meeting and Alumni Reunion Celebrating 30th Anniversary of RCHSD/UCSD Pediatric Orthopedic Fellowship *Indianapolis, Indiana*

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April 27 – April 30, 2016

The Pediatric Orthopedic Society of North America (POSNA) meeting was held in Indianapolis on April 27-30th and proved to be an outstanding event for our orthopedic training program. Many of our research papers were presented and in addition several of our staff received special recognition.

Dr. Salil Upasani was given the St. Giles Young Investigator Award for 2016 which provides research support to an outstanding young researcher in children's orthopedics (see later section). This is a great honor for our program since two prior San Diego fellows have received this award once they had completed the training program (Dr. Firoz Miyajni, now in Vancouver and Dr. Eric Edmonds, on our RCHSD staff).

Dr. Dennis Wenger was presented the 2016 POSNA Distinguished Service Award for his lifelong contributions to children's orthopedics (see later section).

In addition we celebrated the 30th anniversary of our fellowship program and had a very vibrant evening fellow alumni event at a nearby restaurant. This was perhaps the best attended of all fellowship reunions and special attention was given to our faculty members who had achieved the honors noted above. The attached photographs document this very important and productive POSNA annual meeting.



**Fellow alumni and RCHSD ortho staff after “toast” to Dr. Wenger for his receiving the 2016 POSNA Distinguished Achievement Award.**



# Pediatric Orthopedic Society of North America



**Tracey Bastrom and Bob Cho – Dueling Photographers**



**R. Liu (Cleveland), N. Pandya (San Francisco),  
G. Gantsoudes (Washington DC)**



**K. Wenger (San Diego), M. Marks (Tucson), Anne Wenger  
(San Diego), Christine Wenger Glaze (San Diego)**



**M. Elliot (Fresno), G. Hahn (St. Petersburg), F. Lalonde (Orange Co), L. Meyers (St. Louis) – class of 1999**



# Pediatric Orthopedic Society of North America - cont'd



**M. Schmitz (San Antonio), R. Liu (Cleveland), N. Pandya (San Francisco), G. Gantsoudes (Washington DC), E. Fornari (NYC)**



**C. Sullivan (Chicago)**



**J. Schulz (NYC)**



**E. Sink (NYC)**



**J. Roorcroft (Research San Diego), V. Young-Calandra, RN (San Diego)**



**M. Stepanovich (Portsmouth, VA), A. Pytiak (Denver), T. Huang (Taiwan), J. Murphy (Atlanta)**



# Pediatric Orthopedic Society of North America - cont'd



**J. Kemppainen (Grand Rapids), B. Scannell (Charlotte), C. Souder (Temple, Tx), A. Joffe (New Jersey), D. Lazarus (San Diego)**



**M. Ellington (San Diego), D. Wenger (San Diego), C. Souder (Temple, TX)**



**R. Goodwin (Cleveland), R. de Swart (Cleveland), W. Yassir (Detroit)**



**M. Schmitz (San Antonio), A. Pytiak (Denver), A. Pennock (San Diego)**



**M. Adamczyk (Akron), C. Caltoun (Indianapolis), J. Tis (Baltimore)**



# Pediatric Orthopedic Society of North America - cont'd



**S. Nelson (Loma Linda), J. Schlechter (Orange Co.),  
P. Newton (San Diego)**



**J. Roorcroft and T. Bastrom (Research – San Diego)**



**C. Caltoun (Indianapolis) and  
T. Bloom (New Jersey)**



**(left) J. Kemppainen (Grand Rapids), C. Souder (Temple, Tx),  
A. Joffe (New Jersey), B. Scannell (Charlotte) – class of 2013**



**M. Pring (San Diego, “unidentified – nice head of hair”,  
F. Lalonde (Orange Co.)**



**D. Wenger (San Diego), J. Bomar (Research – San Diego)**



# Pediatric Orthopedic Society of North America - cont'd



**V. Swaroop (Chicago), J. Schlechter (Orange Co),  
P. Henderson (Tucson)**



**S. Mubarak (San Diego), R. Ilgenftiz (Orlando)**



**H. Chambers (San Diego), G. Gantsoudes (Washington DC)**



**A. Pennock (San Diego), T. Huang (Taiwan),  
I. Ahmed (Ft. Belvoir, VA)**



**D. Wenger, P. Newton, B. Akbarnia (all San Diego)**





**D. Wenger (San Diego) and S. Weinstein (Iowa City) were residents together at the Univ. of Iowa and remain life-long friends, co-authors, etc.**



**S. Kishan (Indianapolis), M. Adamczyk (Akron),  
S. Van Valin (Milwaukee)**



**S. Steinman (Seattle), S. Upasani (San Diego),  
K. White Seattle)**



**Michelle Marks (Setting Scoliosis Straight Foundation),  
Jeff Pawelek (Growing Spine Foundation), Max Marks**

## **“Holding Down the Fort” – April 2016**



In perusing this issue you may note that neither in the above pages nor in the “30 Years of Fellowship” section does one see pictures related to either Dr. Doug Wallace or Dr. Eric Edmonds of our staff. This is not intentional but reflects that every academic training unit has to keep a few staff (and fellows) at home during the annual POSNA meeting. Otherwise your hospital’s orthopedic coverage would collapse.

Those who are chosen sometimes volunteer, sometimes elect to not attend when they do not have a paper in the program, or perhaps have been very busy with travel during their academic year and/or on traveling fellowships. Enclosed are the happy photographs of this year’s stalwarts who elected/volunteered/were perhaps coerced to remain in San Diego during our POSNA meeting. We salute them for their support.

## AOA-ASG Traveling Fellowship – April 2016

*Eric W. Edmonds, MD*



**Dr. Edmonds and Katarina Chiari, pediatric orthopedic surgeon in Vienna and grand-daughter of Professor Chiari.**

This was the first year in the past eight that I missed the annual POSNA meeting, but it was the trade-off for spending the month of April traveling through Austria, Switzerland and Germany as part of the American Orthopedic Association (AOA) traveling fellowship program. The program is a joint venture between the AOA, Canadian and British Orthopedic Associations, as well as the Societies in the German-speaking world. It was a privilege to be selected to represent our society (POSNA).

I had three co-fellows on this four-week adventure including Simon Mears from Little Rock, Arkansas (specializing in geriatric orthopedics, as well as both hip and knee arthroplasty), Andrea Veljkovic from Vancouver (specializing in sports medicine and foot & ankle surgery), and Matthew Sewell, a pediatric spine surgeon from Middleborough, England.

We started our trip with a lovely visit to the home of Professor Rudigar Krauspe in Dusseldorf, followed by travel through the Rhine River Valley where we were introduced to classic Germanic hospitality. We visited University centers in Dusseldorf, Cologne, Essen, Bonn, Frankfurt, Heidelberg and Mainz – all in the first week. Each local host was generous and thoughtful of our time and interests.

On the first weekend, we had a cultural tour during an ASG Symposium near Trier in a village named Filzen where we

stayed at a winery owned by the uncle of Christoph Zilkens (one of last years ASG fellows and the organizer of this year's tour). The symposium was a grand success because it brought last years fellows together with this year's fellow class.

Week two brought us to former East Germany, where we visited facilities in Magdeburg and Berlin. Being in the former Soviet controlled area of Germany, reflected a distinct difference in the infrastructure (construction, roads and layout). We visited the famous Charite Klinik in Berlin and once again were engaged academically with local talks regarding absorbable metal implants, and other innovative research.

Week three started with an enjoyable eight-hour train ride from Berlin to Innsbruck, Austria. Here we met a great hospital team and watched some amazing operations. We then traveled to the grand city of Vienna where we visited both University and private hospitals and were also treated to 'Don Pasquale' at the famous Vienna Opera house.

To start our final week, we traveled by plane to Switzerland where we visited Zurich and then Basel. We visited two private centers in these cities and experienced a different approach to patient care than that seen in the University centers. Professor Anke Eckhardt (current Secretary of the ASG Alumni program) took us to Luzerne where we took in the breathtaking beauty of the Alps.

The tour concluded in Baden Baden, Germany where we attended the VSOU (Southern Germany Orthopedic Society) meeting. We also had a moment to reflect on many issues including the distinction that they still have (but are working to resolve) regarding orthopedics and orthopedic trauma being distinct Departments in each hospital.

I also had the opportunity to gain some insight from Professor Reinhard Graf of Vienna. On the very last day of the trip he told me that medicine changes every 20-30 years because this is the generation of leadership change. I believe that medicine can change at a faster pace. And it is fellowships, like the AOA-ASG exchange, that help us bridge some of the gaps (whether generational, or distance, or healthcare systems).



**Home of Prof. Rudigar Krauspe of Dusseldorf (pictured second from right). Dr. Edmonds and my co-fellows from left to right Andie Veljkovic, Simon Mears, and Mathew Sewell.**



## Bern Visiting Fellowship in Hip Preservation Surgery – February 2016

*Salil Upasani, MD*



**Dr. Upasani (center) and other visiting fellows  
– Bern – Feb. 2016**

Modern orthopedic surgery includes constant advances in both concept and surgical technique. Currently one of the areas of most rapid change is the development of the subspecialty of “hip preservation surgery” that includes the diagnosis and treatment of subtle hip asymmetries that evolve during growth and become symptomatic during adolescence and early childhood. Left untreated these hip asymmetries can lead to very premature hip arthritis.

The University of Bern (Switzerland) has become the worldwide leader in the development of hip preservation surgery and our hip center has had a close working relationship with their center, including participation as faculty members of the biannual Bernese Hip Symposium. Having one of our faculty members spend additional time in Bern brings important new concepts back to San Diego that improve our care for complex hip conditions and adolescents and young adults.

This February Dr. Upasani completed a one month clinical visiting fellowship in Switzerland. He spent a majority of his time in Bern at the Inselspital working under Professor Klaus Siebenrock (one of the most important thought leaders in the field of hip preservation surgery). He was impressed by their surgical volume and was able to perform a number of periacetabular osteotomies, surgical dislocations, acetabular and periarticular femur fractures and total hip arthroplasties.

Unlike in the United States, foreign visitors are able to scrub and perform as first assistants in the surgical procedures. As such, he was able to learn the pararectus approach which is just beginning to gain popularity to address periarticular hip pathology. He was also able to get a “behind the scenes” look at the impressive research infrastructure established at Inselspital.

During the month, he also had the opportunity to travel to a number of other premier facilities throughout Switzerland and Germany including the Schulthess Klinik in Zurich under Professor Leunig, the Sonnenhof Klinik in Bern under Professor Notzli, and the University Hospital in Dusseldorf under Professor Krauspe. These centers including the Inselspital in Bern have been the center of the “hip preservation universe” over the last 2 decades and have been primarily responsible for developing a number of the procedures and imaging techniques that are commonly used today. It was a rare opportunity to directly communicate and learn from these experts in the field and get a glimpse of the advances that are in the pipeline for the next 5-10 years.

It wasn't just all work though. He travelled from one end of Switzerland to the other. Highlights included the CERN large hadron collider near Geneva, the highest point in Europe at Jungfrau, and the beautiful and historical city of Luzern. Professor Siebenrock also treated the entire department to a ski-day where Salil tried to keep up with the 4-year old Swiss children on the amazing Alpine slopes.



**“Spartan quarters” –  
Dr. Wenger visits Dr.  
Upasani during  
Bernese Hip  
Symposium – Feb.  
2016**

# Special Team Members



## Chad Richard, BS, OTC

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### *Orthopedic Technician Supervisor*

Orthopedic technicians support orthopedic surgeons and providers (NPs and PAs) by providing the following services: casting, splinting, brace application, pin and suture removal, wound care, assisting in the operating room, traction application as well as providing support with clinics by taking an initial history, presenting cases to orthopedic surgeons, documenting orthopedic surgeon's findings and scribing patient notes. The orthopedic technician's role, providing the above mentioned services, allows orthopedic surgeons and providers the ability to see a much larger volume of patients because before the implementation of orthopedic technicians these services were performed by the orthopedic surgeons.

I was born in Sacramento, California and moved to San Diego at the age of 2. I went to Santa Sophia Academy (private Catholic school) from kindergarten to eighth grade, graduated from Monte Vista High School in Spring Valley, CA and then graduated from San Diego State University with a bachelor's degree in kinesiology with an emphasis in sports medicine. In my senior year at San Diego State I also completed the orthopedic technician program through Grossmont College and UCSD Hospital.

Once I completed my education and training I applied to multiple large hospitals and was first hired by Palomar Medical Center. Two months later I received a call from Children's Hospital and was hired as a per diem employee. While working at both hospitals I was able to compare and

contrast the different environments of adult healthcare and pediatric health care and found that I preferred pediatric care. I came to this conclusion because I really was able to enjoy and benefit from the fact that CHSD is a teaching hospital for future orthopedic surgeons. I eventually became a full time employee and was hired to spend half of my time working in the hospital clinics and the other half working for the orthopedic private office on campus. After four years of service the opportunity of becoming the orthopedic technician supervisor was offered to me and I have served in this role for the past 14 years.

When I first began working at CHSD there were only 5 orthopedic technicians and only 5 orthopedic surgeons. Now with the addition of 5 new orthopedic surgeons and multiple NPs and PAs our service has grown dramatically and we now have 14 orthopedic technicians supporting our service. Obviously we could not function without this skilled team that includes: Peto Agregado, Kim Alfaro, Daley Ek, Monique Evans, Scott Jiricek, Noble Johnston, Lara Kulak, John Oliva, Daniel Sadowski, Susan Tremelling, Charles Vick, Ian Wong, Andrey Zhuk, and Becky Scelso.

Our orthopedic clinic averages roughly 230 patients per day with roughly 60-70 percent of the volume needing orthopedic technician services. Thanks to the highly skilled and experienced orthopedic technicians on my staff we are able to provide these services to our patients in an efficient manner.



**Chad, Dr. Newton, and happy family. Chad has worked with this family on installing and maintaining their complex mobile halo traction system (used for preliminary correction of very severe scoliosis).**



## Educating at Home

### *Local Orthopedic Teaching Activities*



Although much of this issue refers to our national and international activities, it should be noted that the greatest part of our educational mission occurs here on the Rady Children's Hospital campus. Every Monday and Friday morning we have important conferences. Monday includes the preoperative review of orthopedic cases to be operated for the week (6:30-7:30am). From 7:30-8:30am we continue with a combined conference that includes our children's orthopedic faculty, fellows, residents etc. as well as faculty from the radiology and pathology departments from Rady Children's Hospital. This is an extraordinarily instructive conference that allows us to review important, often complex cases.

On Friday morning we meet from 6:30-7:30 to review x-rays of all cases treated surgically during the week as well as all trauma cases that have been treated. This is followed by typical lectures from our faculty alternating weekly with the Orthopedic Journal Club.

Also our internal orthopedic education includes specialty conferences held between our formal Monday and Friday AM efforts. Each week we have a rotating 6:30am conference by the following specialty divisions: Orthopedic Research Meeting (focuses on all active research studies), Neuromuscular disorders in childhood, Sports disorders in childhood, Scoliosis and spine disorders, and Hip disorders in childhood and adolescents.



**Resident learning to remove a cast at the annual Resident Boot Camp**

Each is attended by the faculty that sub-specialize in these areas and also fellows, residents, students and research associates.

Other activities that we participate in include the Quigley Hospital Research Symposium which has been established in honor of Ed Quigley, PhD, who was originally the Chief Engineer in our Motion Analysis Laboratory in the 1990s who (after a period of working at a center on the east coast) returned to be the Chief Research Compliance Officer for Rady Children's Hospital. A wonderful friend of the orthopedic division who contributed greatly to our success, tragically Dr. Quigley was involved in a fatal automobile accident in 2013. In his memory, the annual RCHSD Quigley Symposium was established by the hospital to display the research of all divisions at Rady Children's Hospital with orthopedics playing a major role. The attached photographs illustrate our involvement in this event.

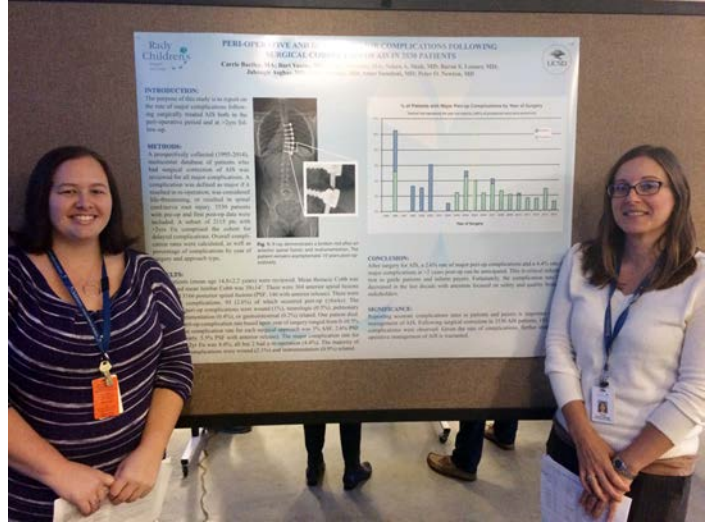
In addition our facility gives multiple lectures at UCSD as well as participating in the Orthopedic grand rounds at UCSD. Also each PGY1 resident who enters the orthopedic training program at UCSD is involved in a multiday "Orthopedic Boot Camp" that teaches incoming residents the basics of becoming a functional orthopedic resident. Our hospital has a long history for teaching cast application methods and as a result, all new PGY 1 residents come here for an orientation day in mid-June for training in orthopedic casting methods as is noted in the photographs below.

Thus "education at home" remains the most important mission of all in our teaching program. As the famous Boston politician Tip O'Neill noted, "all politics is local". Our orthopedic parallel would state that "all teaching is local" – all national and international teaching ensues as a result of our becoming outstanding teachers at home.

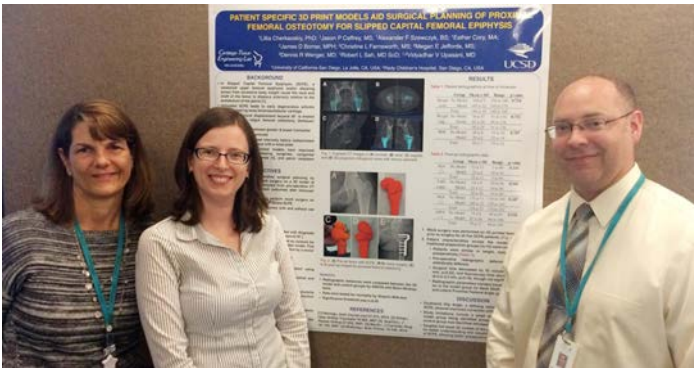
# Educating at Home



**Kristina Parvanta (RCHSD athletic trainer) presenting her work on elbow rehab at the 2016 PRISM meeting hosted by RCHSD and 360 Sports Medicine**



**Carrie Bartley and Tracey Bastrom answer questions on a poster at the 2015 Quigley Symposium held at RCHSD.**



**Christy Farnsworth, Lillia Cherkasskiy, PhD, and JD Bomar presenting their work on patient specific 3D models to aid in surgical planning at the 2015 Quigley Symposium.**



**2015 annual Spine tutorial**



**Attendees of the 2016 ROCK Sports Medicine meeting held at RCHSD (not all attendees are in this photo).**

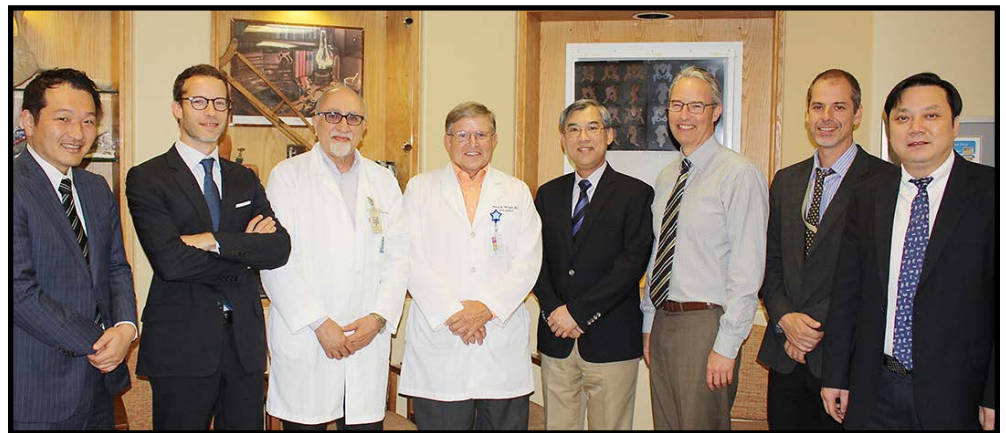


# Educating at Home



Annual ultrasound course put on each year by Dr. Mubarak and Natalie McNeil to teach new fellows how to perform an infant hip clinical exam and learn to interpret infant hip ultrasound.

SRS traveling fellows hosted at RCHSD – June 2016 (Travelling fellows team leader – Prof. Keith Luk – Hong Kong – 4th from right).



Dr. Mubarak with Association of Southeast Asian Nations (ASEAN) visiting fellows under auspices of AOA and UCSD (visiting RCHSD – June 2016).

# Documentation (Our Publications)



Orthopedic fellows and staff enjoying 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, 2014 – December 2015.

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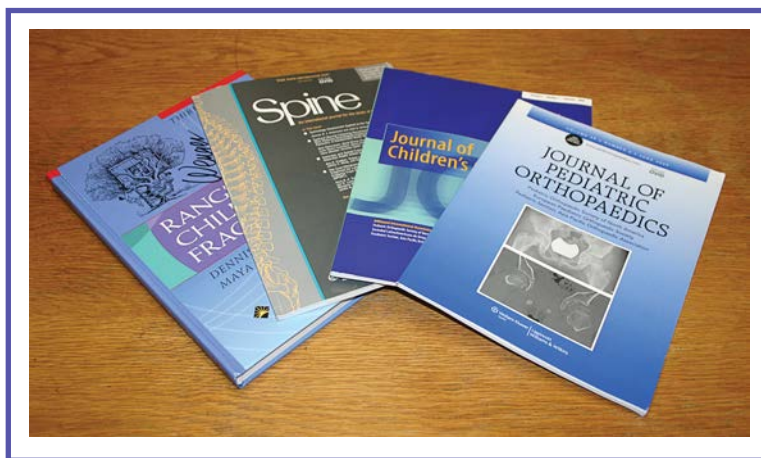
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# Spreading the Word – Global Outreach



**Alain Dimeglio, George Thompson, and Dr. Mubarak at the Navy Orthopedic Conference in Hawaii (February 2016)**



**Dr. Fazir Mohamad with Dr. Newton at IMAST (summer 2015) conference in his home town of Kuala Lumpur (Former fellow and now head of Ortho at his hospital).**



**Dr. Chambers with former fellow Ray Liu in Cleveland where Dr. Chambers was visiting professor.**



**Dr. Wenger visiting Dr. Klaus Parsch (previous David Sutherland visiting professor) in his very private home office (Stuttgart, Germany). Both went on to the IPOTT meeting in Vienna – Sept. 2015**



# Spreading the Word – Global Outreach



The Newtons with Dr Seki (former international spine fellow) visiting the Japanese “Alps” outside Toyama after JORS meeting.



Happy orthopedic surgeons at faculty dinner of Bernese Hip Symposium (Feb. 2016). Dr. Wenger and Dr. Stuart Weinstein (Iowa City)(left); also (right) Dr. Young Jo Kim (Boston) and Dr. Ernie Sink (NYC) are in the foreground.



Dr. Benjamin Joseph (Manipal India – right) and colleague Dr. Hitesh Shah, demonstrating post operative findings in a Perthes patient to Dr. Wenger (Dr. Joseph has performed femoral osteotomy for Perthes in more than 600 children).



Dr. Wenger as VP at Manipal University Hospital in India (Spring 2015).



# Spreading the Word – Global Outreach



**Dr. Pennock being interviewed by the news for his study regarding the elbow health of Little League athletes (summer 2015).**



**Dr. Jean Dubouset (Paris) and Dr. Wenger at the Scoliosis Research Society meeting (Minneapolis) – following Dr. Wenger’s Harrington Lecture (September 2015).**



**IPOTT meeting in Vienna (Sept 2015). The distinguished trio of international leaders (Franz Grill – Vienna, Ken Kuo – Taipei, and Klaus Parsch – Stuttgart) are representative of IPOTT membership (an international organization of thought leaders in children’s orthopedics). Peter Newton (RCHSD) and Peter Waters (Boston Children’s Hospital) are co-chairs of the organization.**



**Dr. Upasani and Dr. Wenger in Museum – Paul Klee in Bern, Switzerland (February 2016). Note that the auditorium is named after Maurice Müller, the famed Swiss hip surgeon and founder of the AO. His foundation gave the funding for this museum.**



**Dr. Jesse Dickson (Houston) and Dr. Wenger at Scoliosis Research Society meeting (Sept. 2015). Dr. Dickson (retired) was the surgical practice partner of Paul Harrington.**



*When you know a thing, to hold  
that you know it, and when you  
do not know a thing, to allow that  
you do not know it:  
this is knowledge*

– Confucius



# Rady Children's Hospital San Diego



*If a little knowledge is dangerous, where is  
the man who has so much as to be out of  
danger?*

– Thomas Henry Huxley