

# Connections 2015

A Newsletter from the Children's Orthopedic and Scoliosis Training Program • Issue 11 – 2015

## Message from the Director

We have had another productive year in our orthopedic training program and we welcome you to this 2015 issue of our newsletter. As you may notice, we have adopted a new format with blue highlights which makes us consistent with varying publications produced by the hospital/foundation.

Again you will find this to be a less than traditional scientific newsletter since the purpose of this publication is to present overall news including academic, social, and cultural information related to our orthopedic training program mission. Yes, we do science (55 recent publications – see page 32) but will not provide any details in this newsletter. You can find these elsewhere (a PubMed query) but there is no other place to find our “orthopedic story”.

Our organization continues to grow in several ways but remains at 10 staff orthopedic surgeons, a nurse practitioner/physician assistant pro-

gram of similar size (10-12) with 4 fellows and 4 or 5 residents rotating at any one time on our very busy service. International fellows supplement the team.

Dr. Peter Newton, chief of our division, is very active in organizing and coordinating our clinical, educational and research activities. His “business sense” is respected and of great value in the many negotiations needed to keep us afloat.

Dr. Scott Mubarak, always eager for a new task/responsibility, has accepted the Interim Surgeon in Chief position with a focus on research productivity for all surgical divisions at Rady Children's Hospital. This is an important responsibility and an honor for our division to be seen as a leader in surgical education and research.

I remain Director of the Pediatric Orthopedic Training Program and coordinate our overall educational mission with Dr. Maya Pring organizing resident activities. Ms. Heather

Johnston has assumed the Academic Coordinator position, replacing the recently retired Karen Noble (see pg. 20). Dr. Eric Edmonds has assumed the position of Director of Research and works closely with Tracey Bastrom in developing and expanding our incredibly productive research program (see pg. 9). Dr. Newton keeps a close eye on research as well, especially as related to spine studies.

We are now fully assimilated into our third floor Orthopedic Center in the medical office building (MOB) which is one floor below our academic orthopedic offices. We moved into this space in mid-2013 and are now settled into a spacious, efficient unit which allows us to see all central San Diego patients in one location. In addition, we have a busy clinic in Escondido as well as smaller satellite clinics in Encinitas and Riverside County.

We have now been in our beautiful modern patient care pavilion

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Mubarak



Wenger



Chambers



Newton



Wallace



Pring



Yaszay



Edmonds



Pennock



Upasani

# Message from the Director -cont'd



for several years. This building has spacious accommodations for all inpatient and operating room needs. To allow maximal staff efficiency regarding inpatient vs. outpatient surgery, we perform all operative cases in the main operating rooms in this building. This avoids making our staff run from one place to the other and also allows our residents and fellows to have access to all operative cases.

There are also plans underway to begin construction of an entirely new faculty/staff office building here on the Rady Children's Hospital San Diego campus that will provide office space for all medical and surgical faculty. This will be a major change for orthopedics in that we will move from our current fourth floor MOB space, which many of you are familiar with, into a new building. As you know we are quite attached to our current space since we personally designed this workspace for an academic office/practice with the help of design architects from Atlanta and elsewhere. We hope that our new facilities will be similarly efficient. The reason for the change is that the hospital wants all space in the current MOB to be used for patient care clinics and not for administration/education/research. Progress always requires adaptation and I'm sure we will survive.

We are proud of our 2015 U.S. News and World Report #2 ranking (see pg. 3) which we believe is well-earned as we strive to have one of the world's best overall children's orthopedic and scoliosis programs with strong activity in patient care, teaching, and research.

Our residents come from UCSD, the San Diego Naval Medical Center (Balboa), and the San Antonio combined orthopedic program (military). Our fellowship remains widely sought after and we have just completed the 2015 match (for 2016 fellows) with our matched fellows coming from the very top of our ranking list.

Our formal teaching conferences remain the focus of our educational program and in addition to the standard Monday and Friday morning conferences, we now have a wide variety of sub-specialty conferences held during the week including research, hip disorders, spine disorders, neuromuscular problems, as well as sports and trauma.

Our graduating fellows remain in demand because

we continue our program of allowing the fellows to take call and to have some independent clinical responsibility. This is consistent with a gradual national recognition of the need for graded responsibility in surgical training.

We are also observing a new pattern regarding where fellows may choose to take staff positions at the completion of their fellowship. Many major cities and academic centers have enough children's orthopedists and in some places there may be a modest surplus. In contrast there are major cities throughout the United States that are not yet served by a children's orthopedist. The enclosed article (pg. 22) discusses this issue. So you will find our fellow graduates not only in the major cities and academic centers of North America (and throughout the world) but also in Fargo, North Dakota and Wichita, Kansas.

Finally, we just completed our annual David Sutherland Visiting Professorship with Dr. Will Mackenzie, Director of the Orthopedic Service at the Nemours/ Alfred I. duPont Hospital for Children in Wilmington, Delaware as our guest professor. This was an enjoyable and highly educational experience for all (pg. 16).

We look forward to the continued interest and support of our alumni and friends.

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

*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 #2!**



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 2nd in the nation for the 2015 ranking.

Although we are not an organization 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 of us, and also reflects the energy and effort of our large group of fellows who we have trained over the past 25 years. Finally, we are fortunate to work within a hospital that is highly functional with an outstanding medical and nursing staff.



### Best Hospitals for Pediatric Orthopedics

How We Rank Hospitals

**#2** **Rady Children's Hospital**  
San Diego, CA

Bed Count: 377  
Type: Children's general

**NATIONALLY RANKED HOSPITAL**  
in 10 specialties

Orthopedics Scorecard	
<b>Overall</b>	<b>95.9/100</b>
Reputation	64.2%
Volume	46/57
<a href="#">Full Scorecard</a>	

## Rady ranks 2nd nationwide in orthopedics

By Paul Sisson 6:05 P.M. JUNE 9, 2015

PRINT COMMENTS 0



The US News & World Report ranking was picked up as a front page story in the Union Tribune

# 2014 - 2015 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, 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.



**Imraan Ahmed, M.D.**

Dr. Ahmed graduated from medical school at New York University and completed his residency at Brooke Army Medical Center in San Antonio, Texas. After residency he was assigned to work for 3 years at a Combat Support Hospital in Seoul Korea. He was then stationed at Landstuhl Regional Medical Center, Germany mainly caring for wounded warriors injured in Afghanistan. From Germany he was deployed with a Forward Surgical Team to Farah, Afghanistan for 6 months. He began his fellowship with us after living and working abroad for 7 years. During his time in San Diego he studied acetabular morphology in hip dysplasia using MIMICS based CT surface reconstructions as well as a study of the 5-year reoperation risk and causes for revision after idiopathic scoliosis surgery. He also studied the effects of increased intracapsular hip pressure on femoral head perfusion in skeletally immature pigs. Upon completion of his fellowship he will be starting a pediatric orthopaedic practice with the Army at Fort Belvoir, Virginia, which is affiliated with Walter Reed National Military Medical Center in Bethesda, Maryland.



**Joshua Murphy, M.D.**

Dr. Murphy graduated from medical school at West Virginia University and then took his residency at the Atlanta Medical Center Program in Atlanta Georgia (previously the Georgia Baptist Program). He then came to San Diego for his fellowship where he has had a very productive year. His research interests have included the study of pathologic fractures associated with acute hematogenous osteomyelitis where he studied a group of patients from both Atlanta and in San Diego. He has also studied scoliosis correction as related to the lowest instrumented vertebrae in thoracic major curves and helped to initiate what will be an ongoing series of studies evaluating the correction of femoral anteversion. He has accepted a position at the Children's Orthopaedics of Atlanta program where he will be working along with Dr. Michael Bush and colleagues at the program based at the Atlanta Scottish Rite Hospital.



**Andrew Pytiak, M.D.**

Dr. Pytiak attended medical school at Wayne State University in Detroit and continued as a resident in the Wayne State Training Program where he developed an interest in both children's orthopedics and sports medicine. After matching with our program he came to San Diego and has been active with research focused on sports disorders in childhood including an important study of MRI abnormalities in Little League Baseball throwers' elbows. After his fellowship Dr. Pytiak will be following an increasingly common trend by taking a second fellowship before he begins his practice. He will be going to the University of Colorado where he will be studying with Dr. Eric McCarty, Director of the Sports Medicine Program at the University of Colorado. He has not yet decided where he will practice following the completion of two fellowships.



**Matthew Stepanovich, M.D.**

Dr. Stepanovich completed his medical school training at Michigan State University and residency at Naval Medical Center in Portsmouth Virginia. During his fellowship year, Dr. Stepanovich's research topics included studying the outcomes of the triple innominate osteotomy to treat severe Perthes disease; operative treatment for medial epicondyle fractures; and a study of patellar instability. Upon completion of this fellowship he will return to the Portsmouth Naval Medical center and will join the faculty of their pediatric orthopedic program. He will treat all types of pediatric orthopedic conditions, including scoliosis.



**2014-15 orthopedic fellows with William Mackenzie, the 2015 Visiting Professor.**



**Fellows learning ultrasound techniques from Natalie McNeil – Hip US Tech.**

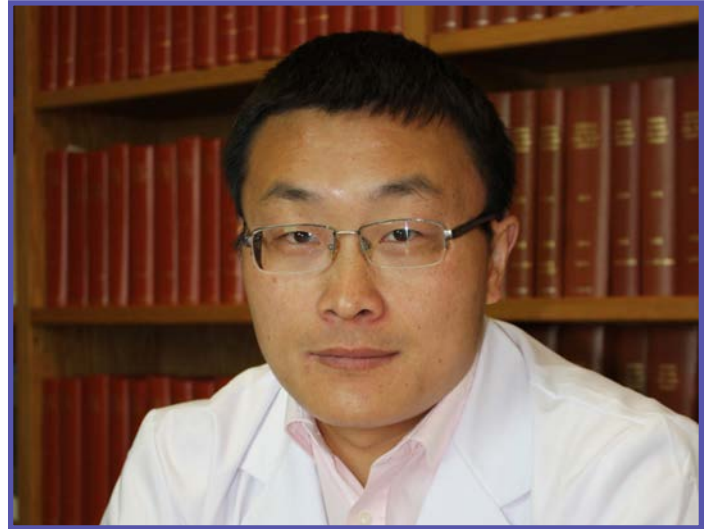
# 2014 - 2015 International Fellows

## International Fellows

Because of our growing national and international influence our orthopedic education program continues to host international fellows. They come from throughout the world to study modern treatment methods for scoliosis, hip disorders, cerebral palsy, and other children's orthopedic conditions.



**Ming-Tung (Tony) Huang, MD**  
Cerebral Palsy and Hip (Intl.)  
Tainan, Taiwan  
July 2014 – June 2015



**Zhou Chunguang, M.D.**  
Spine (Intl.)  
Sichuan, China  
October 2014 – March 2015



**Tony Huang receiving his graduation certificate**

## *Arriving International Fellows (2015-2016)*

**Waturu Saito, MD** (Japan)  
April 2015 – April 2016

**Young Choi, MD** (Korea)  
July 2015 – December 2015

**Kuan-Wen Wu, MD** (Taiwan)  
September 2015 – April 2016

**Yi Yang, MD** (Australia)  
February 2016 – July 2016

# Arriving Fellows - 2015-2016

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 fellows listed below will arrive August 1, 2015 to begin their academic year. These are outstanding young surgeons from throughout North America and we look forward to working with them.



**Keith Bachmann, MD**  
(Cleveland Clinic)



**Matthew Ellington, MD**  
(Scott & White, Texas A&M)



**Corey Fuller, MD**  
(Loma Linda)



**David Lazarus, MD**  
(Emory)

## **Keith Bachmann, MD**

Undergrad: University of Virginia, Charlottesville, VA- Bachelor of Science in Biology

Medical School: Virginia Commonwealth University school of Medicine, Richmond, VA- 2010

Residency: Cleveland Clinic, Cleveland, OH

## **Matthew Ellington, MD**

Undergrad: Austin College, Sherman, TX- B.A. Mathematics

Medical School: University of Texas Southwestern, Dallas, TX- 2010

Residency: Scott & White Hospital/Texas A&M School of Medicine Orthopaedic Surgery Residency, Temple, TX

## **Corey Fuller, MD**

Undergrad: La Sierra University, Riverside, CA- BS Biomathematics

Medical School: Loma Linda University School of Medicine, Loma Linda, CA- 2010

Residency: Loma Linda University Department of Orthopaedic Surgery, Loma Linda, CA

## **David Lazarus, MD**

Undergrad: The University of Georgia, Athens, GA, BS Microbiology

Medical School: University of Tennessee College of Medicine, Memphis, TN- 2010

Residency: Emory University Orthopaedic Surgery, Atlanta, GA

## *Future Fellows (2016-2017 Academic Year)*

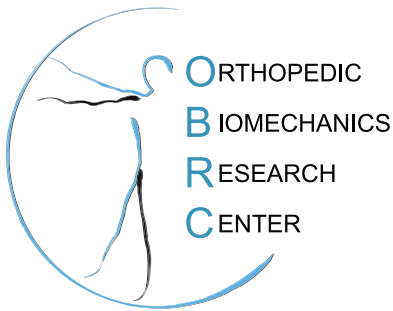
We are happy to announce that we have matched with the outstanding residents listed below

**Jaysson Brooks, MD**  
Johns Hopkins

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

**Kathleen Reay, MD**  
Duke University

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



## OBRC Year in Review

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

The OBRC continues to provide research support for Rady Children's Hospital Division of Orthopedics staff physicians, fellows, residents, academic and industry collaborators. The mission of the OBRC and Translational Research Center is to **complement and advance clinical decision making and the understanding of orthopedic problems by applying sophisticated analytical techniques incorporated from multiple disciplines**. To this end, we have conducted biomechanical analyses comparing fixation techniques for fibular fractures and SCFE pinning, and comparing surgical repair methods for medial patellofemoral ligament injuries. We studied pressures "within" casts and how valving and the use of spacers alters this pressure. Three-dimensional hip morphology changes with growth were studied in both a porcine model and in pediatric patients with developmental hip dysplasia. We investigated how to better understand the imaging of pediatric conditions (medial epicondyle fractures and femoral anteversion) related to the actual amount of deformity (displacement or torsion) present in the bone. In all, seven manuscripts were published or accepted for publication this year.

One exciting result of the expansion of our collaborations with the UCSD Departments of Bioengineering and Orthopaedic Surgery is our ability to create patient-specific models for precision surgery. This will assist greatly 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.



**Dr. Parvaresh and Dr. Yaszay preparing to test a vertebral implant**

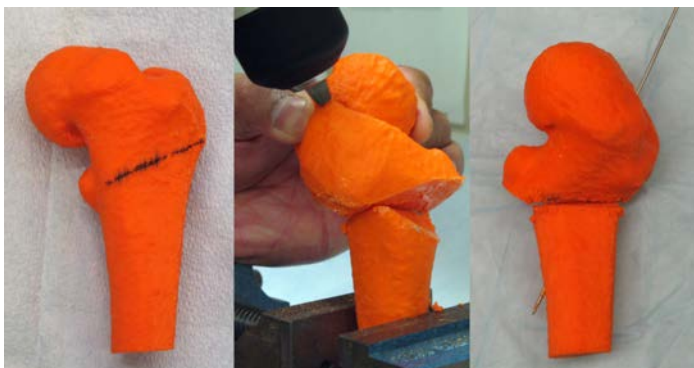
Last fall (October 2014), the OBRC moved out of its original cinder-block home (aka: Building 16 or "the garage"). The current location includes a separate machine shop and material testing lab spaces, with room for innovative people and projects. During the past few weeks, the cinder-block structure was demolished to make way for a new physician office building on the Rady Children's Hospital campus. Those of us with offices nearby watched the buildings being torn down and will have a front row seat for the construction activities during the foreseeable future.

We are pleased to announce that this June, Megan Jeffords, M.S. was added to the Orthopedic Research team, in the OBRC and Translational Research Centers. Megan finished her MS degree in Biomedical Engineering from the University of Akron, Ohio in May. Her graduate work was in the Stem Cell and Tissue Engineering Lab at UA where



**Megan Jeffords, MS**

her research focused on tailoring material properties of decellularized cardiac matrix hydrogels for cardiac tissue engineering. She is looking forward to applying her educational background and lab experience to the realm of pediatric orthopedics. Megan, with her eager and can-do attitude, is a very welcome addition to our team.



**3D model of severe chronic SCFE printed for surgical planning**



## Research Team Year in Review

### *Tracey Bastrom, MA*

The first half of 2015 has been a productive time for the research team. Twenty-six journal articles, authored by our attending surgeons, have appeared either in print or e-publication ahead of print in the first 5 months of this year. The department was represented via 5 podium presentations and 1 poster at the American Academy of Orthopedic Surgeons (AAOS) meeting held in Las Vegas this past March. One month later, our investigators made 12 podium and 5 poster presentations at the annual POSNA meeting in Atlanta. This is a tremendous accomplishment to be so well represented at a meeting that is critical to the advancement of pediatric orthopedics. Our investigators are asking important questions and the research team is doing a great job putting forth the effort to answer those questions and assist in bringing the data to the national/international community.

Upon returning to San Diego following the POSNA meeting in Atlanta, we made a final push to have everything ready for our fellow, resident, and medical student presentations to our annual Visiting Professor, Dr. Will Mackenzie. The research team enjoyed Dr. Mackenzie's teaching style, vast knowledge, and overall energy. It was an outstanding event and now that it is over, efforts are underway to finalize the projects and generate manuscripts for journal submission by our current fellows before they depart on July 31.

In addition to supporting our fellows' research efforts, our department continues to maintain a high volume of active projects. Not only has our infrastructure grown, but so has the breadth and scope of our studies. At the present time, we have approximately 70 protocols approved or undergoing review by the UCSD IRB. Of those, 25 (36%) are prospective studies, requiring us to obtain signed informed consent of the patients and their guardians. This is quite an increase compared to the 1-2 prospective studies the department was engaged in when I first joined the orthopedic team in 2000. While these types of studies involve a significant amount of effort, the increasing demand for higher levels of evidence within the scientific community make this extra effort necessary in order to provide the best evidence possible.

We had two projects, in particular, during this last year which really took the help of a 'village' to accomplish. One was recently presented by Dr. Newton at POSNA, entitled "New EOS Imaging Protocol Allows a 50-fold Reduction in

Radiation Exposure for Scoliosis Patients". The other project, presented at our Visiting Professor event by a current fellow, Dr. Andrew Pytiak (under the mentorship of Dr. Pennock) was "Pre-season Assessment of Radiographic Abnormalities in Little League Baseball Throwers' Elbows".

I would love to name all of the team members that played some part in helping the department complete these projects, but I am afraid it would become the written equivalent of an Oscar award winner trying to shout above the wrap-it-up overture. Suffice it to say, we are grateful for all of the support for these two very exciting projects.

The children of San Diego, and beyond, benefit from the practical applications of all our department's important studies.

Best wishes,

Tracey Bastrom, MA  
Orthopedic Research Program Manager



**Research team (L to R) – (back row) Carrie Bartley, Karen Littleton, Megan Jeffords, Carlo Munar, JD Bomar, Rick Reighard, and John Munch. (front row) Aileen Laurente, Christy Farnsworth, Tracey Bastrom, and Joanna Roocroft.**



The Hip Center at Rady Children's Hospital San Diego continues to be a world leader for the treatment of pediatric and adolescent hip disorders. Since its foundation by Dr. David Sutherland, our clinical focus and research continued to grow under the leadership of Drs. Scott Mubarak and Dennis Wenger. Current faculty with an intense interest in hip problems include: Dr. Salil Upasani, Dr. Doug Wallace, Dr. Maya Pring and Dr. Andrew Pennock.

Our newest team member, Dr. Salil Upasani, now serves as co-director of the hip team and as the hip research team leader. He developed a strong interest in pediatric hip conditions during his residency in the UCSD/Rady program. He then received additional intensive hip training during his fellowship at Boston Children's Hospital with Dr. Michael Millis and Dr. Young-Jo Kim. In the near future he will take a short fellowship at the Inselspital in Bern Switzerland with Professor Siebenrock to further develop his knowledge of hip preservation surgery. Dr. Upasani now focuses on complex adolescent and late teenage hip problems with Dr. Wenger coordinating childhood and early adolescent problems, particularly Legg-Perthes disease. Dr. Mubarak continues his active clinical and research interest in early childhood hip disorders.

Our team continues to push the development of new techniques to address complex hip pathology and have developed strong collaborations with the Sports team. Drs. Andrew Pennock and Eric Edmonds perform hip arthroscopy to address intra-articular hip pathology (i.e. labral tears, chondral injuries, loose bodies) while our open hip preservation experts address the mechanical deformities that are often the root cause of the hip injury.

An example of our team effort is illustrated here in a case where Drs. Upasani and Wallace recently collaborated to correct a complex hip deformity in a high BMI adolescent with multiple epiphyseal dysplasia. After extensive discussion in our complex indications conference and review of a prior research paper published in our division, the decision was made to proceed with a proximal femoral flexion, valgus osteotomy plus osteochondroplasty combined with a periacetabular osteotomy to maintain joint congruity. The pre-operative and post-operative images shown here demonstrate appropriate correction of hip mechanics while

## Hip Team Activities

### Surgical Correction of "Functional Retroversion" and "Functional Coxa Vara" in Late Legg-Calvé-Perthes Disease and Epiphyseal Dysplasia: Correction of Deformity Defined by New Imaging Modalities

Hui Taek Kim, M.D., and \*Dennis R. Wenger, M.D.

*Study conducted at the Children's Hospital and Health Center, San Diego, California, U.S.A.*



**Complex femoral and acetabular osteotomies to correct hip dysplasia in a MED patient. This recent case applied principles from a paper we had previously published.**

preserving a congruent hip joint with appropriate gluteal muscle tension.

Rady Children's Hospital continues to be an active member of the International Hip Dysplasia Institute (IHDI) directed by Dr. Chad Price. As institute members Drs. Mubarak and Upasani are currently completing a multi-center prospective study on brace outcomes for infantile dislocated hips. Our team has also been involved in multiple national and international courses with IHDI focused on developmental dysplasia of the hip. The October 2015 IHDI teaching conference will be held in San Diego with most of our hip teaching staff on the faculty.

This has been a very productive year in terms of our hip research program. Drs. Wenger and Upasani recently completed a review of our patients with Perthes disease that were treated with the triple innominate osteotomy, confirming the benefits of advanced containment methods, even in many older children with more severe disease (if the head is truly contained). Drs. Pennock and Upasani are working to define the secondary ossification centers of the acetabulum

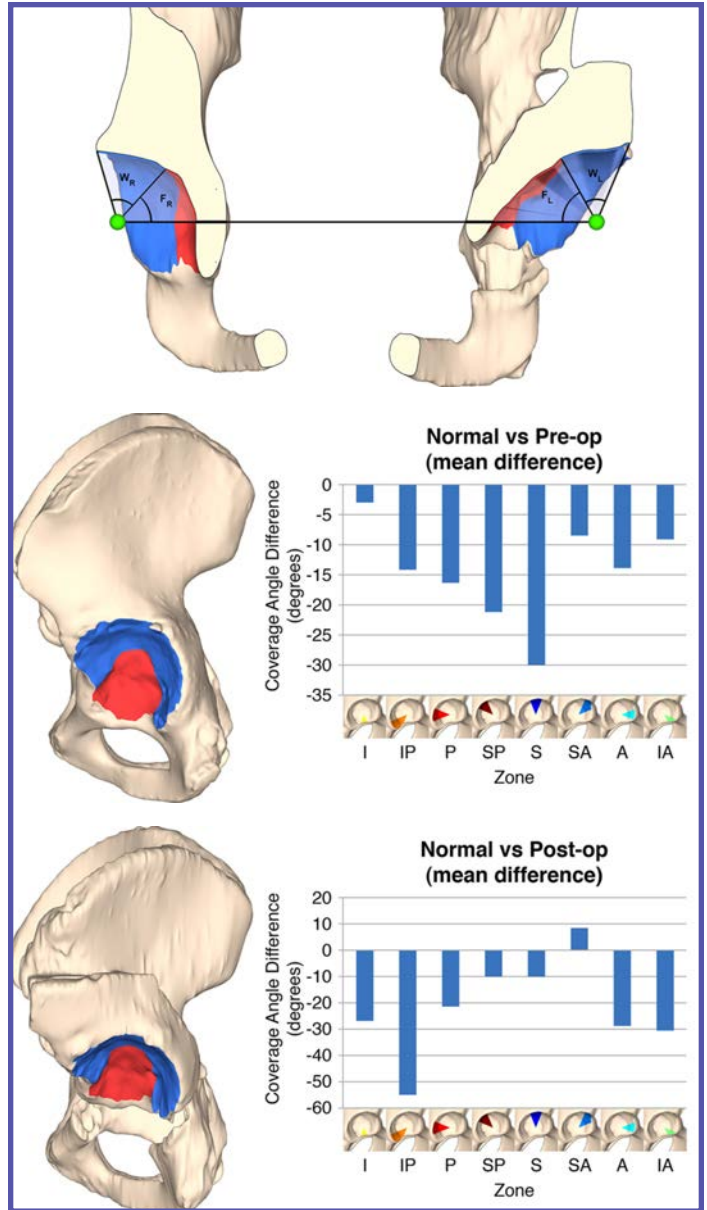
and pelvis to better understand the three-dimensional development of the hip joint and its relationship to pathologic conditions. Dr. Upasani is also working with Dr. Tim Schrader from Atlanta Georgia to determine the influence of intra-capsular hip pressures on hip perfusion in an immature porcine model.

We have also developed strong collaborations with Dr. Robert Sah in the Bioengineering Department at UCSD on a study of hip synovial fluid in children with hip dysplasia to identify early markers of hip degeneration. Dr. Sah is also helping us to use 3-D printed models for patients with severe chronic slipped capital femoral epiphysis or hip dysplasia to plan our surgical interventions and best address the complex mechanical deformities in these patients.

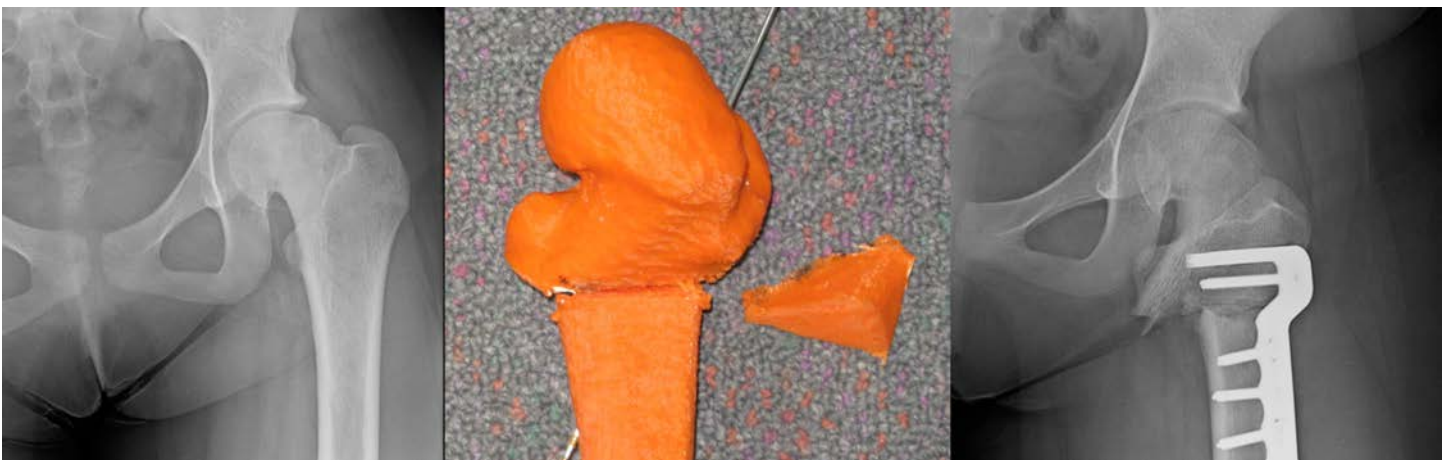
The Hip Center continues to be recognized throughout the world as a thought leader regarding childhood, adolescent, and young adult hip problems.



**Dr. Mubarak's annual hip US course for fellows and residents**



**Coverage angle evaluation technique post PAO**



**3D model printed from CT of a hip with SCFE, models like these have been instrumental in pre-operative planning**



## Scoliosis and Spine Deformity Center

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The Scoliosis and Spinal Deformity program of Rady Children's Hospital is one of the best known in the world and almost weekly, children and their parents come to San Diego from throughout California, the United States, and the world for consultation and corrective surgery. They come because of our recognized surgical excellence in correcting scoliosis but also for application of the most advanced treatment methods including the spinal tether method developed by Dr. Peter Newton (more below). Our center features outstanding surgeons, world class surgical techniques, cutting edge research, and the surgical application of the methods developed from this research. The service is directed by Dr. Peter Newton who is assisted by Dr. Burt Yaszay and Dr. Salil Upasani. In addition we have an Early Onset Scoliosis Center which is co-directed by Dr. Yaszay and Dr. Behrooz Akbarnia.

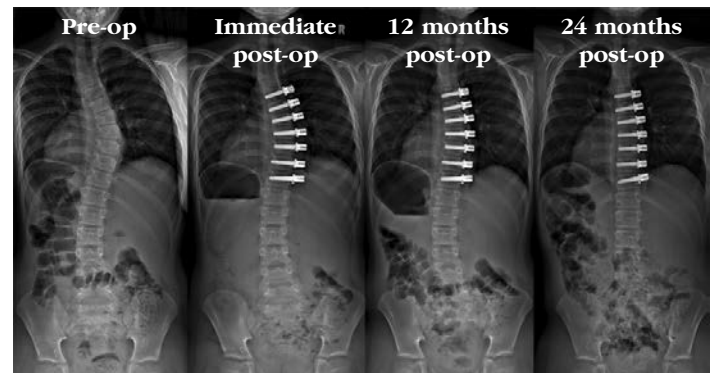
Scoliosis has been an area of central interest at Rady Children's Hospital beginning in the 1970's when the late Dr. Tom Laughlin and others from the private sector performed Harrington rod corrective surgery. Our scoliosis program quickly grew in the 1980's when Dr. Scott Mubarak and Dr. Dennis Wenger introduced the Cotrel- Dubuosset system as well as electrical stimulation methods for correcting mild scoliosis.

Many further advances occurred in the late 1990's after Dr. Newton arrived on the scene. Dr. Newton attended undergraduate school at UCSD (bioengineering program) followed by medical school at the University of Texas Southwestern Medical School in Dallas. He returned to UCSD for orthopedic residency and went back to Dallas for his fellowship at the Texas Scottish Rite Hospital.

We recruited him to our staff with a goal of his developing a strong clinical and research program related to scoliosis which has been achieved to a remarkable level. He arrived at a time when the Cotrel-Dubuosset method had been in place for a decade and the world was ready for a new generation of scoliosis corrective systems. One of the first new developments was the thoroscopic approach to scoliosis correction, including attaching spinal implant rods anteriorly through the chest cavity, avoiding any significant skin incisions. Dr. Newton and a few other surgeons throughout the world became masters of this technique.

Soon thereafter, advanced posterior instrumentation methods were developed in Germany and Miami that allowed almost all scoliosis to be corrected by posterior methods. We became an expert center for the application of this system. Dr. Newton then joined the research team to develop a new corrective system (Expedium) that included efficient uni-planar pedicle screws to allow anatomic correction of scoliosis in both coronal and sagittal planes. Much of the important spine research in our center focuses on this issue of 3 dimensional understanding of spinal deformities.

Another recent innovation has been the application of a spinal cord tethering system which can be applied in growing children thus avoiding a cumbersome corrective scoliosis brace. This is somewhat similar to the correction of teeth in the dental profession by gradual correction over time. In spine deformity, this correction occurs by tethering the vertebra on one side but allowing continued growth on the opposite side, thus allowing curve correction over time. Dr. Newton has been instrumental in developing this concept.



**Spinal tether patient correcting over time**

The Early Onset Scoliosis Treatment Group (Drs. Yaszay, Akbarnia, and Mundis) has brought many new ideas to our center including the use of magnetically driven corrective rods (the MAGEC system) which once implanted in a young child, allows gradual correction of the scoliosis by external application of a system that activates the magnetic internal corrective drive mechanism. This allows maintenance of normal spinal growth while the spine is being corrected and is often applied at age 4-8 years.

# AHEAD OF THE CURVE

The Official Newsletter of The Setting Scoliosis Straight Foundation

YOUR VOICE IN ACTION: OUR PATIENTS SPEAK!

VOLUME 7, ISSUE 1



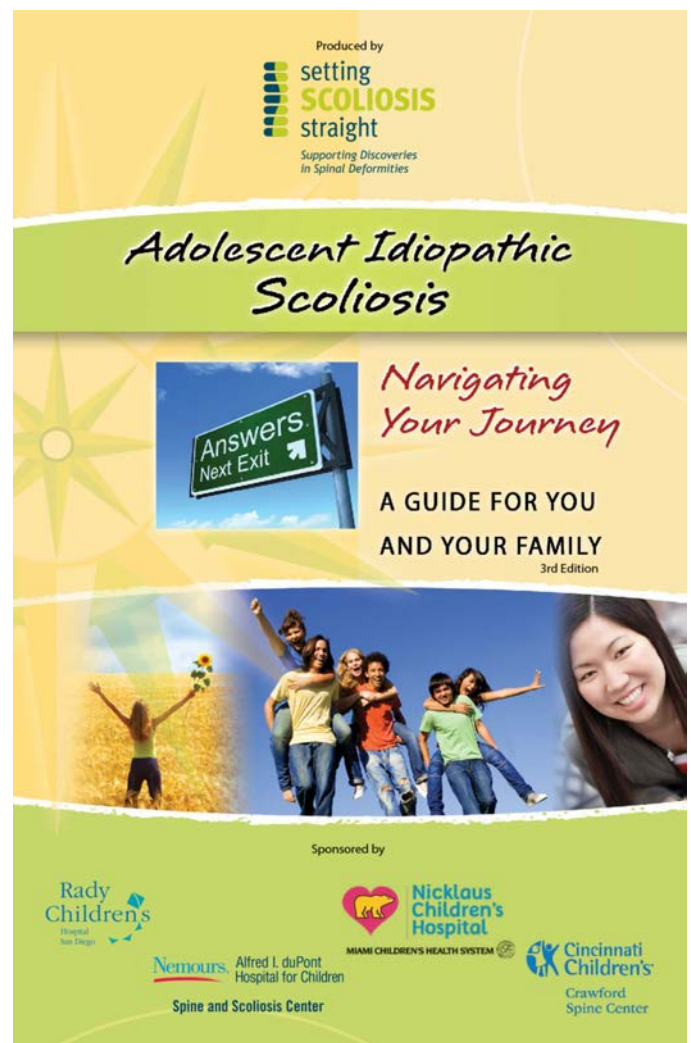
*Ahead of the Curve* – the Setting Scoliosis Straight newsletter is released 2-3 times per year

Education of patients and their families has also been a very active and important part of our scoliosis program. The Harms Study Group, established about 20 years ago to further research in management of scoliosis, has been centered at Rady Children's Hospital for the last 10 years and includes a foundation model to support education in scoliosis. Several years ago the name of this foundation was changed to the Setting Scoliosis Straight Foundation, also based in San Diego. One of its major goals is to educate families. The booklet "Scoliosis - Navigating Your Journey - A Guide for You and Your Family" typifies their educational mission.

To further orthopedic education and research, on the 20th anniversary of the Harms Study Group, a meeting was held in Las Vegas, NV in January 2015 to celebrate the event. A very instructive, educational conference was held with leaders from throughout the scoliosis world attending.

This was followed by a gala dinner held at the Frank Gehry designed "Keep Memory Alive Event Center" in Las Vegas. This was attended by many orthopedic surgeons as well as many families who have been helped by contemporary scoliosis surgery techniques. Organizations such as the Setting Scoliosis Straight Foundation are important in gaining widespread cultural support for the education and research required to care for medical conditions, such as scoliosis.

You can see that for many reasons we are proud of our scoliosis and spinal deformity center which is one of the best in the world.



The cover of the Setting Scoliosis Straight handbook on adolescent idiopathic scoliosis. The full handbook can be downloaded at [www.settingscoliosisstraight.org](http://www.settingscoliosisstraight.org)

# Sports Medicine for the Young Athlete



It has been another busy year for 360 Sports Medicine. Now in its third year, the program continues to grow with the focus of “keeping young athletes in the game”. The sports medicine program is co-directed by Hank Chambers and Eric Edmonds while Doctors Andrew Pennock, Maya Pring and Doug Wallace play important roles in managing these young athletes. 360 Sports Medicine now extends beyond the orthopedic surgery team with critical involvement from several family medicine and emergency medicine physicians who sub-specialize in sports injuries including Doctors Kenneth Taylor, Suraj Achar, and Yu-Tsun Cheng. Additionally, Doctors Andrew Skalasky and Michael Levy lead the concussion program. Since its inception, the concussion service has managed hundreds of patients overseeing all neurocognitive testing and returns to sports clearance.

Our partners from physical therapy are key players on our team and we now have five different satellite offices around the county. Feedback from patients and families regarding the combined approach with the therapists and surgeons seeing patients at the same location and time has been extremely positive.

Clinical research continues to be a focus of the 360 Sports program with the 2014-2015 academic year being our most productive year yet. With more than 20 peer-reviewed publications and more than 50 presentations and posters at national and international meetings, our staff has been working hard to become leaders in their field. One of the more exciting research topics has been the development of a Little League Baseball Research Initiative, entitled the San Diego Pitching Project. The goal of this project has been to better

understand throwing injuries in skeletally immature athletes to allow better prevention, treatment, and performance enhancement approaches. This program is a multi-disciplinary approach using surgeons, radiologists, therapists, coaches, and motion analysis experts in an attempt to better understand throwing pathology and risk factors for these injuries.

Currently we are in the process of completing our first three studies looking at baseline MRI abnormalities in Little League thrower’s elbows, MRI changes that occur over the course of a season, as well as the utilization of diagnostic ultrasound in the management of these athletes. An interesting early finding is the impact of year round baseball on the medial epicondyle and proximal humeral growth plate which is abnormal in as many as 40% of patients.

Hank Chambers remains the President of the Pediatric Research in Sports Medicine (PRISM) group and the 2nd annual meeting in Weston, Florida was hugely successful with attendance of more than 127 sports medicine providers, physical therapists, and athlete trainers. Over the last several years our program has become involved with 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), and now skeletally immature ACL injuries (PLUTO study group). These prospective studies will hopefully provide valuable insight into the best treatment approaches for these conditions. Clearly the establishment of a sports sub-section within our group has been a resounding success.



## UCSD “Resident Research Year” Program

### *Research*

One of the outstanding components of the University of California San Diego Orthopedic Residency Training Program, which was founded by Professor Wayne Akeson when he came to San Diego from Seattle in 1969, was his decision to establish an orthopedic residency that included a full year dedicated to research. Despite many economic and other pressures, the resident research year has continued under the leadership of Professor Steve Garfin who succeeded Dr. Akeson as chairman. After the PGY1 year, all orthopedic residents take a full year for research and are assigned to one of the major teaching laboratories in the UCSD orthopedic system. Fortunately for us, the Orthopedic Biomechanics Research Center at Rady Children's Hospital, under the direction of Dr. Peter Newton and Dr. Eric Edmonds, is one of the research year rotation sites for the residents.

This extra year of residency serves to produce a more scientific, analytic and broadly educated orthopedic surgeon. Over the last 8-10 years, Rady Children's Hospital has had one of the research residents assigned to us performing biomechanics research projects as well as a special focus on scoliosis studies. The accompanying photograph demonstrates five of the “graduates” of this program.

During this research year, the research resident also takes a few clinical night calls to keep in touch with clinical practice. Residents assigned to our department for the year take their night call here at Children's Hospital and attend all of our clinical teaching conferences. By the end of the research



**Dr. Wayne Akeson and Dr. Steve Garfin**

year, this individual is highly skilled both in orthopedic research methodology as well as emergency orthopedic care in children's orthopedics. Per prior scheduling arrangement, this resident then begins their first clinical rotation in his PGY3 year as a resident at Rady Children's Hospital. They are fully prepared for all the learning aspects of starting a new rotation which is a great benefit both to us and to the resident.

We wish to thank Professor Wayne Akeson for starting this outstanding program, Professor Steve Garfin for continuing it, and Dr. Newton and our entire research staff for making the Rady Children's Hospital research rotation so incredibly productive.



**Outstanding UCSD research resident contributors. Each has been at Children's Hospital for a year over the last 5 years. (Dr. Kevin Parvaresh, Dr. Emily Osborn, Dr. Amir Misaghi, Dr. Krishna Cidambi, and Dr. Joe Carreau with their research mentor Dr. Newton)**

# 42nd Annual David H. Sutherland Visiting Professorship



## William G. Mackenzie, MD

*Chairman, Department of Orthopedic Surgery  
Nemours, DuPont Hospital for Children*

May 15, 2015

Our annual David Sutherland Visiting Professorship highlights our academic/research year. Our residents and fellows work on a variety of research projects throughout the year, with the goal of presenting them at our visiting professorship, which occurs in either April or May. In dedication to the founder of our program, this is referred to as the David Sutherland Visiting Professorship in children's orthopedics. When establishing the history of the program, we included the 15 years that Dr. Sutherland had invited visiting professors prior to his retirement as well as all subsequent visitors. In summation, this has resulted in 2015 being the 42nd Annual David Sutherland Visiting Professorship.

Our faculty takes great care in deciding who should be the invited guest professor. Due to our national and international affiliations, we have good insight as to what type of surgeon can best fulfill this role. In June 2014, immediately after last year's visiting professorship, we decided to invite Dr. Will Mackenzie, Professor of Orthopedic Surgery at Jefferson Medical College in Philadelphia and Chief of Orthopedic Surgery at the duPont Institute Hospital in Wilmington, Delaware, as this year's visiting professor.

This turned out to be an excellent decision. Dr. Mackenzie presented several very interesting lectures on his subspecialty of syndromic childhood conditions and their orthopedic manifestations. In addition, he carefully listened to and ana-

lyzed our many research projects which were presented by engineers, fellows, residents, and medical students. We also presented a variety of complex cases, including one patient who had a cervical spine fusion performed in early childhood at the duPont Institute by Professor Mackenzie himself (and then had moved to San Diego). The case was presented for his commentary regarding the outcome and quality of surgery and we all agreed that the surgical indications and methodology were perfect!

In addition, we again recognized OrthoPediatrics of Warsaw, Indiana, as the primary sponsor of our program. We appreciate their support.



**Dr. Mackenzie had many interesting anecdotes to share.**



**Navy residents enjoying the presentations.**



**Visiting Professor Dr. Will Mackenzie quizzing senior orthopedic resident Dr. Joe Carreau.**





**Current fellows and visiting professor Dr. Will Mackenzie of the duPont Institute.**



**Stuart Smay and Dr. Doug Wallace, hosts for the visiting professor departure dinner**



**Dr. Salil Upasani and Visiting Professor Dr. Will Mackenzie**



**JD Bomar, Dr. Edmonds, Tracey Bastrom, and Carrie Bartley of the research team discussing upcoming presentations.**



**Dr. Mubarak, Visiting Professor, Dr. Will Mackenzie, and Dr. Wenger**

# Notes From a Former Fellow



## Raymond Liu, MD *Case Western Reserve University*

(Fellow – 2009-2010)

When I first decided on pediatric orthopaedics, I sat down with my Chief, Dr. George Thompson and it quickly became obvious that I should aspire to do my fellowship in San Diego. It turned out to be some of the best guidance George has ever given me as my mentor.

Although I nostalgically tell my residents about the countless stories and lessons that I took from the faculty at Rady Children's Hospital, San Diego, what I miss most are my three co-fellows from that year. It was an amazing privilege to train along with Bob Cho (now in LA), Geordy Gantsoudes (Indiana/Wash. DC) and Rob Lark (Duke). I fondly remember the many side discussions at Monday and Friday conferences, countless hours in the "glass palace" (our fellow office), and the numerous trips to In and Out Burger after Saturday mornings in the hospital. At the time, Rob was skeptical that abandoning soda in favor of milk shakes qualified as a diet (my theory is that carbonated beverages allow you to eat too much), but I ultimately did work off the extra pounds from the hospital cafeteria's breakfast burritos. During my first year of practice I had the opportunity to visit Bob, Geordy and Rob in their hometowns, and we all continue to stay in touch.

One of the best parts of the San Diego fellowship was the didactic teaching, and I have worked towards developing a similar program at Case Western. I am constantly tweaking the conference structure in my program, which now features Maya Pring style "Jeopardy" sessions. The residents enjoy the constantly evolving sessions, and have given me the "Outstanding Educator of the Year" award twice over the past three years.

My wife, Caryn, and I were both raised in the Los Angeles area, and people cannot understand how we can tolerate the weather in Cleveland. We actually enjoy all the seasons here (even the winter) although we would not mind if it were a bit shorter. We make the best of things, and with each major snowfall, my daughter, Emily, and I will make a different snow animal. Cleveland is a great place to live, and it is a wonderful place to raise a family.

There are two very special research collections here that helped draw me back to my residency here at Case-Western Reserve. The first is the Hamann-Todd osteological collec-



**Dr. Liu, his wife Dr. Caryn Liu and their daughter Emily enjoying a Thanksgiving snowfall in Ohio**

tion, which contains approximately three thousand well preserved complete skeletons, about one hundred of which are eighteen years or younger. I am particularly interested in looking at how deformity parameters influence the onset of spine, hip and knee degenerative disease.

The second is the Bolton-Brush collection, which features serial radiographs throughout the left side of the body and compulsively measured anthropometric measurements of thousands of children, many with ten or more visits. This collection is best known for establishing the Greulich and Pyle atlas. Although data acquisition ended about seventy years ago there is still much to be done in better understanding skeletal growth and applying it to pediatric orthopaedics.

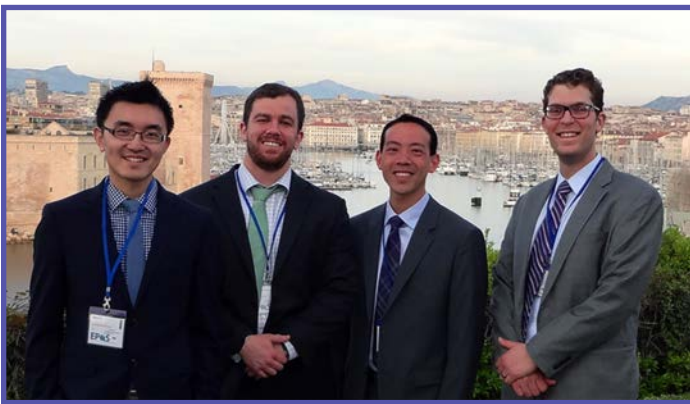
My orthopaedic department at Case Western Reserve University has been very supportive of my academic career. We have excellent medical students and orthopaedic residents to spearhead research, and I have had access to funding to reward them with trips to meetings to present their work. Also, this year I was appointed as the Victor M. Goldberg Master Clinician Scientist in Orthopaedics, an endowed position that will help me continue my work in both collections, as well as pursue basic science and clinical studies.

I enjoy a general pediatric orthopaedic practice, with a focus on limb deformity correction and lengthening. Shortly after starting practice I visited Dror Paley to learn more about limb deformity, and I have re-visited two additional times. My primary career goal is to bring deformity correction into the mainstream of pediatric orthopaedics. I recently started the CHILD (Children's Hospitals Investigating Limb Deformity) multi-center study group, which is beginning with seven surgeons and will hopefully grow after we have established our database and protocols. I have been fortunate to receive advice from the Growing Spine Study Group and Peter Newton on how to build a successful multi-center group.

Reflecting back, what I learned in my fellowship at San Diego has been instrumental in starting my academic career. For one year I was exposed to the very best in terms of clin-

ical practice, education and scientific investigation, and I have been able to apply those principles and habits towards the fantastic resources available in Cleveland. It is with great delight that I watch the continuous stream of excellent fellows coming out of Rady Children's Hospital, San Diego and with great pride that I know that I will always be a part of this orthopaedic family.

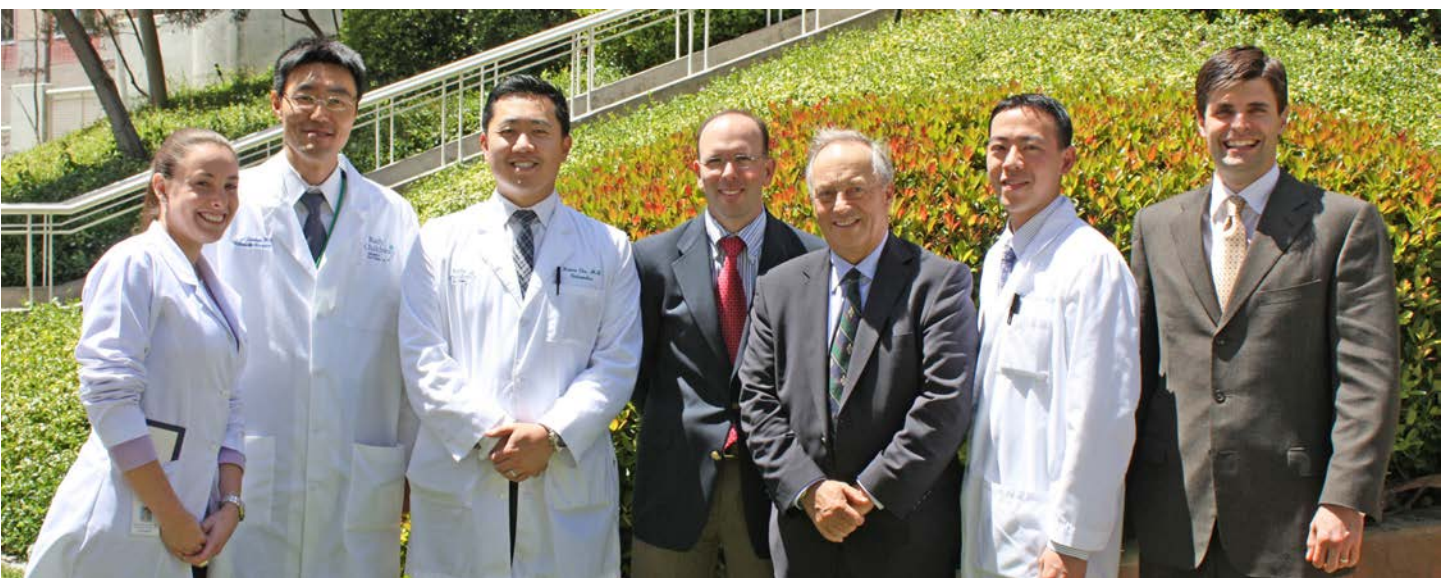
Raymond Liu, MD  
Case Western Reserve University



**Dr. Raymond Liu (former fellow – 3rd from left) and Case Western Reserve orthopedic residents at the April 2015 EPOS meeting in Marseille, France**



**Dr. Liu and a happy patient who had limb deformity correction for femoral deficiency**



**Dr. Liu's Fellowship Class of 2010 – Visiting Professor Dr. Joe Hyndman (Nova Scotia – 3rd from right), Dr. Ana Cunha, Dr. Takashi Ono, Dr. Bob Cho, Dr. Rob Lark, Dr. Ray Liu, and Dr. Gordy Gantsoudes**

# Karen Noble Retires



## Karen Noble, MBA

### *Coordinator of Children's Orthopedic Training Program*

It is with mixed emotion that we announce the retirement of Karen Noble, BA, MBA, our long time administrative assistant and coordinator of the orthopedic residency and fellowship training program. Karen was an extraordinary talent and as all our trainees know, was instrumental in making their life functional. She has continued a wonderful friendship with the training program graduates, particularly our prior fellows who are now positioned throughout the United States and the world.

Karen grew up in La Jolla and was a keen amateur golfer. One of the favorite photographs which she shared with us was taken at a golf tournament at the La Jolla Country Club in which Arnold Palmer played. The photo shows Karen and her sisters talking with Arnold himself.

After her education Karen moved to Washington where she worked in the orthopedic surgery department of the University of Washington Medical School. This gave her great experience regarding everything about orthopedic training ranging from rotations to research projects as well as the orthopedic in training exam (OITE).

She then returned to be near her family in San Diego, worked briefly in the business office section of the Children's Hospital Medical Group, and then joined us about 15 years ago. Over this time period she proved a dependable, intelligent, comprehensively knowledgeable and above



#### **Thank you for everything- emotional retirement event**

all committed professional. She has never missed a day of work, allowing her to fit in well with our orthopedic staff, residents and fellows who generally maintain a rather Spartan schedule.

Karen announced her retirement in January 2014 but we were able to convince her to remain for several additional months followed by an invaluable "consultant" period via the telephone, internet, etc.

Karen Noble has meant a lot to the children's orthopedic world and leaves a wonderful legacy in our program. As we told her just this week, she is/was an important reason for our #2 national ranking.



**Drs. Gottschalk and Ilgenfritz (class of 2011) showing their appreciation for Karen at the fellowship graduation lunch.**



**Dr. Kim thanks Karen for her great help in arranging his international fellowship here in San Diego**

## Tracey Bastrom, MA

### *Orthopedic Research Program Manager*



As in previous years, we have chosen to dedicate a page of the newsletter to an outstanding team member and this year we want to highlight Tracey Bastrom, our research program manager. Tracey was hired by Dr. Peter Newton and Michelle Marks after finishing graduate school in December of 2000. She has an undergraduate degree in psychology from Montclair State University, in her home state of New Jersey, followed by a master's degree from the University of North Florida, in Jacksonville (also in psychology). This small but intense graduate program solidified her foundation of knowledge in research design and statistics that has allowed Tracey to flourish in our Orthopedic Research department.

When Tracey first arrived as a Research Associate fifteen years ago, there were five orthopedic attending staff and three research personnel dedicated to clinical research support. In response to the overall orthopedic department growth, the research team has undergone significant changes and growth as well. Tracey is now responsible, as Program Manager, for overseeing the research activities of the division, which currently has eight employees dedicated to clinical research. As one would expect, the productivity of the department has increased as well. Historic data shows 12 clinically focused peer-reviewed publications in 2005, as compared to nearly 40 clinical publications in 2014. Early career mentoring by Michelle Marks, who now serves as executive director of the Setting Scoliosis Straight Foundation (see pg. 12), provided Tracey with the organizational and management skills to foster the significant growth of our department that occurred under the direction of Dr. Peter Newton. Dr. Edmonds now serves as the Director of Research under the overall divisional leadership of Dr. Newton.

Aside from overall organization and management of the department's activities, Tracey also provides statistical support for the division. This support ranges from analyses to help determine the number of subjects needed for a study, to analyzing study data after it has been collected and conveying the results to the investigators. Often that means co-authoring the results section for the departments various pre-

sentations and manuscript publications. This ability to perform in house statistical analyses is a great asset for the orthopedic team.

At this point in time, Tracey has co-authored over 50 publications within the orthopedic literature and has been the podium presenter for many of these at national meetings (see photo). She is especially proud of the studies she has been able to pursue as lead author within the last few years and is particularly grateful to Drs. Newton, Edmonds, and Yaszay and other orthopedic staff for their support of her interest in advancing methodology for assessing subjective outcomes in our pediatric orthopedic population. Tracey has been selected to be a new adjunct member of the Pediatric Orthopedic Society of North America as of 2015 (POSNA) and we are proud of her for this accomplishment.

We are proud to dedicate this issue to Tracey Bastrom, a quiet, dedicated, and extremely effective team leader. No matter the problem in the orthopedic research arena, Tracey will always find a creative, scientific, solution.



**SRS annual meeting 2014 – panel discussion following a talk given by Tracey**

## Serving the Nation

### *Peds Ortho in Small Places*



Whether our nation is training the correct number of children's orthopedic surgeons continues to be discussed and the Pediatric Orthopedic Society of North America (POSNA) now has a manpower subcommittee to assess job availability.

This has not been an issue for Rady Children's Hospital because our fellowship program, which is filled by the highest quality of residents in North America, never fails to have their trainees hired (often before they have started the fellowship). The reason for this is our balanced surgical education program that, in addition to strong didactics and research, allows the fellows to take some primary night call and operate independently (including their own surgical follow up clinics to care for the patients who came in on their call night). This concept of graded responsibility is of recognized value by the orthopedic practices who are searching for a children's orthopedic surgeon.

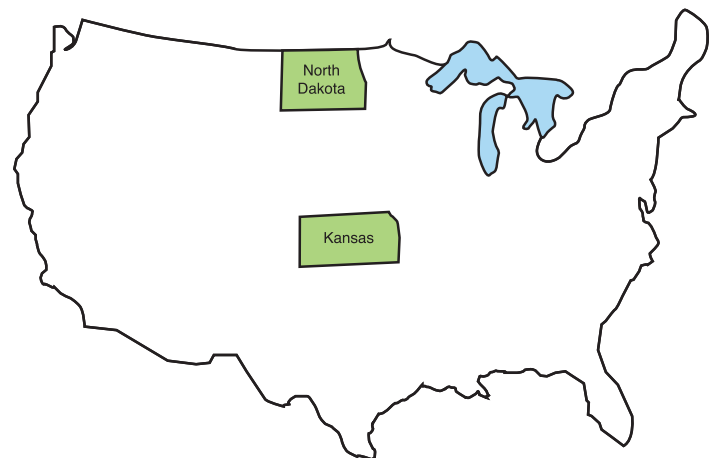
Currently the job market in some larger cities is becoming crowded and pediatric orthopedic fellowship graduates who choose to start a practice there may spend multiple years before they develop the volume and variety of patients that they desire. We now note that some of our fellows choose to apply their education in a place that offers a high volume of complex children's orthopedics soon after starting practice.

Our July 2014 graduating class exemplifies this movement. Two of our four graduates went to major medical centers however the other two selected communities where they are certain that they will have an immediate, active practice. Dr. Matt Hollenbeck, a native of St. Louis, analyzed the market and decided the best possible practice for him would be in Wichita Kansas. At the recent POSNA meeting (after only 9 months of practice), he is extremely busy with many complex cases.

**After finishing your education, looking for a place where you are really needed brings special advantages. Graduating fellow Jon Peterson, featured on a roadside billboard, is South Dakota's only pediatric orthopedic surgeon. (note – "Sanford Children's" is funded by the same Denny Sanford who is also a strong San Diego medical philanthropist)**

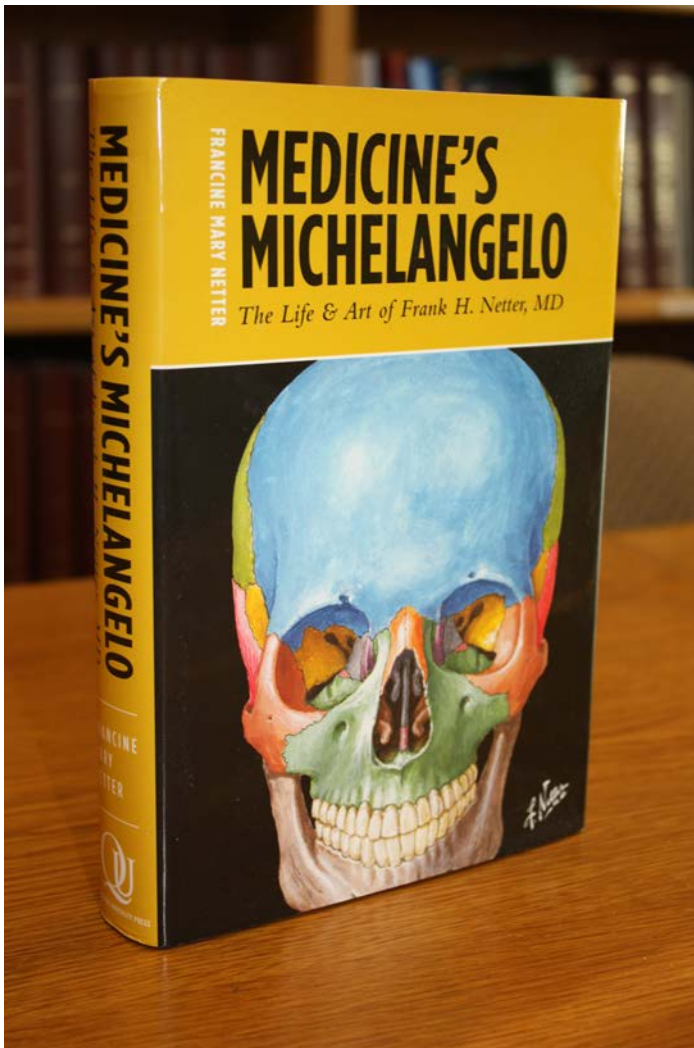
Similarly in the same fellow group, Dr. Jon Peterson, a San Diego native (but with an Iowa wife), joined the Sanford Medical Center in Fargo, North Dakota. This is an extremely well funded hospital and practice in an oil boom state with a rapidly growing population. The associated photograph (taken of a roadside billboard in Fargo) clarifies the arrival of the first (and already busy) children's orthopedic surgeon in the region. Jon is a very hard worker, loves a challenge, and is already highly successful (not such a surprise – his father is the family doctor of the RCHSD pediatric intensive care unit – a nationally recognized program).

We look forward to the evolution of this trend. A children's orthopedist who becomes busy doing both straightforward and complex orthopedic cases soon after starting in practice will likely become the most skilled and most satisfied throughout their career.



## Francine Netter

### *Medicine's Michelangelo* *The Life and Art of Frank H. Netter, MD*



**Ms. Netter's book regarding her father, the famous medical illustrator**

In an effort to make our educational program broad-based and interesting, we keep our eyes and ears open for possible special events that we can arrange. Last year, we learned that Francine Netter, the daughter of the internationally recognized medical illustrator, Dr. Frank Netter, would be coming to the UCSD Book Store to promote a book that she had written about her famous father.

Since one of our staff, Dr. Scott Mubarak, had contributed a chapter to one of Dr. Netter's works (on compartment syndrome), we asked Ms. Netter whether she would be willing to come to Rady Children's Hospital to give a special lecture for a our orthopedic conference.

This was organized in the fall of 2014 and turned out to be a cross-hospital event since our orthopedic group sent out invitations to the entire hospital. As a result, Children's Hospital staff from multiple departments, including General Surgery, Pediatrics and other specialties came to hear the story of the famed Frank Netter as given by his daughter.

This was important for our group because it reflects our interest in the broad culture of orthopedic surgery (not just a special focus on children's orthopedics). We hope to transmit this concept to our trainees with the hope that they will have a more fulfilling and interesting surgical career.

## POSNA Annual Meeting and RCHSD/UCSD Pediatric Orthopedic Alumni Reunion *Atlanta Georgia*

April 29 – May 2, 2015

This year's POSNA meeting (Pediatric Orthopedic Society of North America) was held in Atlanta and was of great importance to our orthopedic group. We had many papers accepted for the podium, including the opening paper for the first morning of the conference (EMR study).

We met many old friends from other institutions, and also a large number of our prior fellows. Our alumni meeting, held in a restaurant adjacent to the meeting hotel, was extremely well organized thanks to Tracey Bastrom's planning skills. Approximately 40 prior RCHSD pediatric orthopedic fellows attended this event, including fellows from more than 20 years ago. It is clear that our prior trainees have a great appreciation for the education that they gained in the Rady Children's Hospital/UCSD fellowship training program.

The POSNA meeting is the centerpiece for the children's orthopedic world and was an immensely successful event for our orthopedic group. The accompanying photographs include many of our prior fellows who attended both the meeting and our reunion event.



**Dr. Matt Hollenbeck (Wichita), Dr. Jon Peterson (Fargo), Dr. Ray Liu (Cleveland) and Dr. Lissette Salgueiro (San Juan)**



**Dr. Matt Schmitz (San Antonio), Tracey Bastrom (San Diego), Dr. Yaszay, Dr. Christopher Bray (Greenville, SC)**



**International Colleagues- Dr. Ken Kuo (Taiwan) Dr. Alain Dimeglio (Montpelier, France), Dr. Peter Armstrong (OrthoPediatrics- Warsaw, Indiana and Tampa , FL) and Dr. Tony Kahn (Austin)**



# Pediatric Orthopedic Society of North America



**Dr. Stefan Parent (Montreal), Dr. Afshin Aminian (Children's Hospital Orange County), Dr. Scott Nelson (Loma Linda)**



**Sunny Park (nurse practitioner) and Dr. Wenger**



**Katie Fields (nurse practitioner), Dr. Eric Fornari (Montefiore) and Dr. Matt Schmitz (San Antonio)**



**Dr. Edmonds, Dr. Meghan Imrie (Stanford), Dr. Abby Allen (Mount Sinai- NYC) and Dr. Christopher Bray (Greenville, SC).**



**Dr. Mubarak and Dr. John Schlechter (Children's Hospital of Orange County).**



**Dr. Robert Cho (Los Angeles) and Dr. Luis Moraleda (Madrid)**



Happy Ladies! Dr. Abby Allen (Mount Sinai- NYC), Dr. Meghan Imrie (Stanford) and Tracey Bastrom (research-SD)



Joanna Roorcoft, (Research- SD), Dr. Matt Schmitz (San Antonio) and Dr. Eric Fornari (Montefiore)



Dr. Tamir Bloom (Newark), Ms. Stuart Smay, Dr. Laurel Meyers (St. Louis), Dr. Stephanie Martin (Atlanta), Dr. Arjandas Mahadev (Singapore), Dr. Wallace

# Pediatric Orthopedic Society of North America - cont'd



**Dr. Chris Souder (Texas) Dr. Pennock, Dr. Brian Scannell (Charlotte), Dr. John Kempainen (Grand Rapids) and Dr. Nirav Pandya (Oakland)**



**Dr. Edmonds, Tracey Bastrom (research program manager San Diego) and Dr. Upasani**



**Dr. Wenger, Dr. Mark Abel (Charlottesville), Dr. Rob deSwart (Cleveland), and Dr. Newton**



**Dr. Wenger, Dr. Chris Souder (Temple TX), Dr. Brian Scannell (Charlotte), Dr. Nariv Pandya (Oakland), Dr. John Kempainen (Grand Rapids) and Dr. Jon Peterson (Fargo)**



**Dr. Jake Schulz (Montefiore) and Dr. Upasani**

## Traveling Fellows

### *A Scientific Give and Take*

The concept of national and international traveling fellowships has become an important part of the orthopedic surgery academic enterprise. The large professional organizations that represent specialist orthopedic surgeons [Pediatric Orthopedic Society of North America (POSNA), Scoliosis Research Society (SRS), and others], set aside a portion of their annual budget to sponsor exchange programs for future leaders of the specialty. This allows the “best and the brightest” of young faculty members to visit leading academic centers throughout the world.

The process for getting such a fellowship is highly competitive thus both the traveling fellows and the institutions who serve as hosts for the travelers consider it an honor to participate. Fortunately Rady Children's Hospital has been very active in this area, both on the “sending” and “receiving” ends.

#### **Incoming Travelling Fellows**

In the fall of 2014, Rady Children's Hospital as well as the University of California San Diego hosted the 2014 Scoliosis Research Society (SRS) traveling fellows from Europe and India. As is typical for the SRS program, a very experienced senior leader is selected as the team leader for the traveling

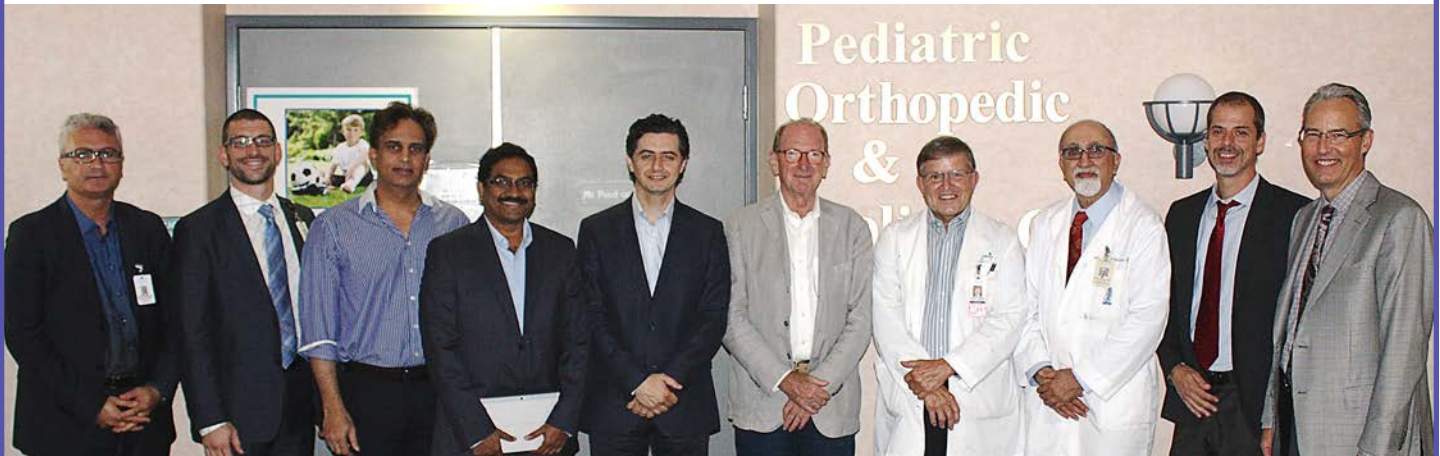
fellows. The SRS traveling fellows who came to our hospital in October 2014 from Istanbul, Nottingham, and Bombay and were led by Professor Daniel Chopin of Paris and Lille, France. We heard papers from each of these surgeons and also presented our important recent research work to them. As is typical for such events, a dinner was hosted by Dr. Burt Yaszay and his wife, Susan (note: in 2015 he represented us as an SRS traveling fellow to Asia – see below).

#### **Outgoing Travelling Fellows**

Interestingly, this year (2015) two of our orthopedic staff were selected to be traveling fellows in important international programs. Dr. Eric Edmonds was selected by the Pediatric Orthopedic Society of North America to be one of the three traveling fellows to travel to Asia. His trip is described below.

In addition, Dr. Burt Yaszay was selected as a Scoliosis Research Society traveling fellow for the 2014-2015 academic year. This program also focused on Asia and is also described below. The SRS-Asia traveling fellows' team leader was Dr. Behrooz Akbarnia, a San Diego scoliosis surgeon who is on the Rady Children's Hospital orthopedic staff and is a co-founder of our early onset scoliosis program.

**SRS Traveling Fellows Visit RCHSD – August 2015**



**Dr. Mehmet Balioğlu (Turkey), Dr. Greg Mundis (San Diego), Dr. Nasir Ali Quraishi (United Kingdom), Dr. J. Naresh-Babu (India), Dr. Meric Enercan (Turkey), Dr. Daniel Chopin (France), Dr. Wenger, Dr. Akbarnia (San Diego), Dr. Yaszay, and Dr. Newton, Fall 2014 – SRS traveling fellowship stop in San Diego.**

# Traveling Fellowship

In summary, international traveling fellowships in orthopedics serve an important role in allowing young leaders to visit leading centers of the world, both to be made aware of cutting edge surgical techniques and research developments, and also to share methods that we have developed. Both Dr. Edmonds and Dr. Yaszay share their experiences below (note that amazingly they crossed paths in Hong Kong!).

## **APPOS-POSNA Traveling Fellowship – Asia – May 2015 – By Eric W Edmonds**

A few years ago, the leadership within POSNA and the APPOS (Asia Pacific Pediatric Orthopedic Society) decided to develop further collaboration via the exchange of traveling fellows, and this year saw the program become a reality. Fortunately, I was one of three North American fellows elected to embark on the inaugural trip. On May 16, 2015, Dr. Amy McIntosh (Texas Scottish Rite Hospital – Dallas), Dr. Noelle Larson (Mayo Clinic), and I began a journey of academic enlightenment, professionalism, and orthopedic practice development.

After flying 19 hours from Los Angeles, we arrived in Perth, Australia where we began our trip. We then visited Adelaide, Kangaroo Island, Sydney and Melbourne. I am grateful to our APOS (Australian Pediatric Orthopedic Society) hosts in each city: Kate Stannage, Bruce Foster, Peter Cundy, Matt Hutchinson, David Little, Ian Torode, Leo Donnan, Michael Johnson and Kerr Graham. The exchange of information on hip dysplasia, scoliosis, and knee pathology was pride of place; however, the innovation (particularly concerning 3D printing) and demonstration of hospital workflow and business design were paramount to the success of our travels in



**New Zealand visit. (L to R) Dr. Amy Macintosh (Dallas), Dr. Edmonds, and host surgeon Dr. Haemish Crawford (Auckland, New Zealand)**

Australia.

After nine days we traveled to Auckland, New Zealand. Here, we were met by the tour de force known as Haemish Crawford, and in combination with Richard Nichols and Steward Walsh, were treated to an amazing exchange of ideas regarding the treatment of pediatric patients and their families. We also visited with Dawson Muir and his colleagues in Rotorua and Tauranga on the North Island before heading to Hong Kong.

I should also mention that not everything on this trip was purely lectures, case presentations and surgical observation. Despite the tight academic schedule, our hosts found time to demonstrate their Australasian culture of both work and



**Separate traveling fellow teams cross paths in Hong Kong (SRS and POSNA fellows). Amazingly, 3 of the 6 fellows (selected in a very competitive application process are fellows or staff from RCHSD – Dr. Stefan Parent (Montreal, 2004 fellow. 1st on the left), Dr. Yaszay (RCHSD staff), and Dr. Edmonds (RCHSD staff and prior fellow).**

# Traveling Fellowship – cont'd



**(L to R) Dr. Emonds, Dr. Amy Macintosh (Dallas), and Dr. Bruce Foster (Adelaide) enjoying Kangaroo Island**

play. In Australia, we undertook the BridgeClimb over Sydney Harbor and were treated to holding Koala and joey kangaroos with Bruce Foster. In New Zealand, we leaped into a free-fall from the SkyTower (670 feet above the city, connected only to a guidewire – no bungee) followed by travel to scenic Queenstown on South Island.

After the week in New Zealand, we undertook a 12 hour flight to Hong Kong. We had an opportunity to be hosted by Jack Cheng, Bobby Ng, and Wang Chow and their colleagues Evelyn Kuong and Arthur Ha for a day of academic sessions. Other travelers joined us at this point including, Stuart Weinstein (Iowa), Ken Kuo (Taiwan) and James Hui (Singapore) and we had a productive exchange of ideas.

Ultimately, we settled into the 10th Annual Combined Congress of the APPOS and APSS (Asia Pacific Spine Society) where we were joined by even more travelers via the Scoliosis Research Society, including my colleague Burt Yazsaz, from Rady Children's Hospital! The meeting was well presented with excellent conversation and idea exchange. The travelling fellowship provided many ideas to implement within my practice and to develop with our hospital as well as an ideal international exchange experience.

## **SRS Traveling Fellow – Asia – May 2015 – By Burt Yazsaz**

Fortunately I was one of three North American surgeons selected for the SRS Travelling Fellowship. Along with Stefan Parent (previous San Diego fellow – Montreal) and Pat Cahill from Children's Hospital of Philadelphia, we traveled to Asia for nearly 4 weeks with senior SRS fellow leader, Dr. Behrooz Akbarnia of San Diego. We first arrived in Nagoya, Japan where we were met by their host, Professor Noriaki

Kawakami who organized the visit. We then travelled by bullet train to Tokyo.

In Tokyo, we were hosted by Professor Mario Matsumoto at Keio University and were exposed to multiple surgeries for AIS, EOS, and neuromuscular scoliosis. As part of the tour we visited the famous Tokyo fish market where we enjoyed fresh sushi for breakfast. We also presented their respective research at the Shinanomachi Spine Symposium at Keio University.

We then travelled to Beijing where we visited two centers including Professor Jianxiong Shen at Peking Union Medical College and Professor Yonggang at the Zhang General Hospital of Armed Police Forces. In each location we had an opportunity to present our research as well as hear the research being performed at each institution. We also had the time to visit the Great Wall as well as the Forbidden City.

Following Beijing, we travelled by plane to Nanjing in China where we were hosted by Professor Yong Qiu from Drum Tower Hospital. The modern hospital which has approximately 2500 beds is the largest spinal deformity center in China. As part of the multiple research projects being done at Drum Tower Hospital, Professor Qui has entered every surgical case into a database including all preop and postop images from the past 15-20 years.



**SRS traveling fellows standing near historic colonial style administrative building of Seoul National University Medical School.**

## Traveling Fellowship - cont'd



**SRS fellows ready for OR visit – Seoul National University Hospital**

After Nanjing, we visited Professor Suk in Seoul Korea and each fellow was able to scrub with Dr. Suk at Seoul National University Hospital. This was closely monitored and “critiqued” by Professor Suk. After our time at Seoul, we traveled by car to Alpensia Resort, the home of the future winter Olympics in Korea. There, each fellow presented a paper at the Korean Spine Society meeting which was followed by an outdoor BBQ.

The final destination was Hong Kong where we remained for 9 days and were hosted by Professor Ken Cheung, future SRS president, from the University of Hong Kong. We again were exposed to surgery and education conferences. Our second host was Professor Jack Cheng from the Chinese University of Hong Kong. As part of our trip to Hong Kong, we participated in an international user’s meeting of the MAGEC rod, a SRS world-wide course, and a combined con-

*Broad, wholesome, charitable views of men and things cannot be acquired by vegetating in one little corner of the earth all of one’s lifetime.*

– Mark Twain

gress of the Asia-Pacific Spine Society and Asia-Pacific Pediatric Orthopedic Society. At this Combined Congress in Hong Kong I met up with Dr. Edmonds and we concluded our traveling fellowships at the same conference!

In addition to being exposed to surgery and educational conferences, I gave a total of 14 talks over 3 ½ weeks. While socially, we interacted with leaders in the field of spinal deformity.

Overall, the SRS travelling fellowship was a fantastic experience that allowed for an exchange of knowledge and ideas that will further surgical innovation, build research collaboration, and ensure educational exchanges personally as well as for our RCHSD program.



**Dr. Yazsay (2nd from Rt) in Hong Kong other RCHSD associated travelers including prior fellow Dr. Stefan Parent (2nd from Lt) and team leader, Dr. Behrooz Akbarnia (center)**

# 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 worlds 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, 2013 – December 2014.

## Publications

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# Documentation (Our Publications)

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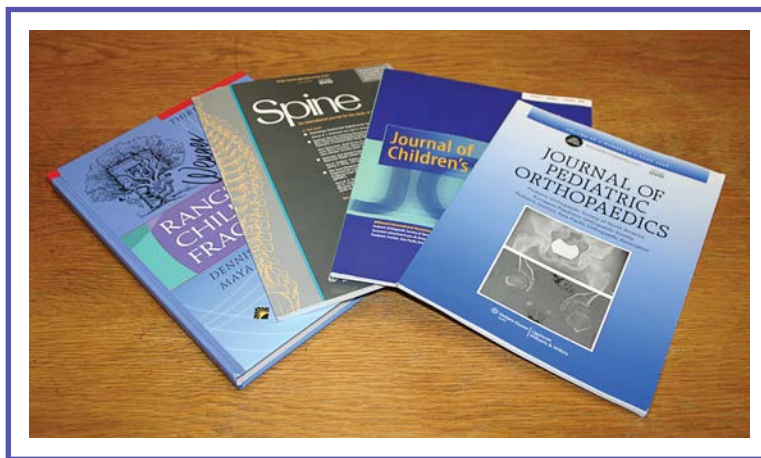
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*The most savage controversies are those about matters as to which there is no good evidence either way.*

– Bertrand Russell

# Spreading the Word – Global Outreach



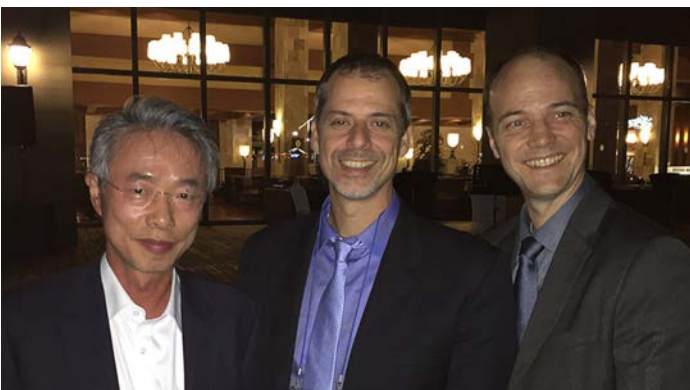
**Dr. Pennock competing with world class athletes on an “off day” athletic session during his travel as an orthopedic surgeon for the women’s US Ski Team**



**Sandy Mubarak, Dr. Remi Kohler (Lyon), and Dr. Mubarak on the bridge to Avignon, France (following the French National Orthopedic Conference).**



**Dr. Wenger visiting the renowned children’s orthopedic surgeon/editor Dr. Ray Morrissy, now retired in South Carolina.**



**Alpensia, Korea (future site of Winter Olympics) following Korean Spine Society meeting. Dr. Choon Sung Lee (prior RCHSD fellow), Dr. Yaszay, and Dr. Stefan Parent (Montreal)(prior RCHSD fellow).**



**Professor Jean Dubouset (2001 Visiting Professor), Dr. James Aronson, Dr. Mubarak, and Professor Remi Kohler (French National Orthopedic Conference)**

# Spreading the Word – Global Outreach



**“The Hip Professors” – Stuart Weinstein (Iowa), Klaus Siebenrock (Bern), and Dr. Wenger (AAOS meeting – Las Vegas – March 2015)**



**Dr. Scott Mubarak at the Brindley Memorial Lecture at the Scott & White Clinic/Texas A&M School of Medicine Orthopedic Department, Temple, TX – Dr. Chris Souder (2nd from Rt) – prior San Diego Fellow**



**POSNA Traveling fellows learn about koalas (Australia). (L to R) Dr. Noelle Larson (Mayo Clinic), Dr. Edmonds, and Dr. Amy Macintosh (Dallas)**



**Klaus Siebenrock Professor of Orthopedic Surgery, Univ. of Bern and chairman of Bernese Hip Symposium with attendee, Dr. Upasani.**



**Bob Cho, MD (Acting Chief of Staff, LA Shrine Hospital, RCHSD fellow – 2009), Dr. Chambers, and Kate Doughty, MD, MPH**

# Spreading the Word – Global Outreach



**Dr. Peter Waters, Director of Orthopedics at Boston Children’s Hospital, with Dr. Wenger – Dr. Wenger as Grice Visiting Professor at Boston Children’s Hospital (Nov. 2014). (right) The Grice lecture was given in the teaching auditorium of the Peter Bent Brigham Hospital.**



**(left) International travel also allows new food experiences, SRS traveling fellows at a sushi restaurant in Tokyo with and Professor Matsumoto of Keio University Hospital (Dr. Yaszay is 3rd from Right) and a Master Sushi Chef**



**Dr. Edmonds and prominent children’s orthopedic surgeons at the Hong Kong segment of the POSNA traveling fellowship (Dr. Mark Lin from Taiwan – 2nd from Rt – is a prior RCHSD fellow)**

# More Orthopedic Life



**Relaxing at Prague Fracture Symposium (Sept. 2014 - Dr. Wenger photo) Dr. Vern Tolo (LA), Dr. Jack Flynn (Philadelphia) and Kathy Wenger (San Diego)**



**Considering “Sporting Matters”  
Dr. Edmonds and Dr. John Schlechter (CHOC) at  
POSNA**



**“Winter is not so bad in Fargo – and with global  
warming, we’ll be ahead of the game”  
Dr. Jon Peterson (Fargo), Sunny Park (NP)(San Diego),  
and Katie Fields (NP)(San Diego) – POSNA – Atlanta**



**Our great international friends. Dr. Ken Kou (Taiwan),  
Dr. Alain Dimeglio (France) at POSNA**



**“Yes, Visiting Professor Program can be fun”  
Dr. Mubarak and Vis. Prof. Dr. Will Mackenzie**

# More Orthopedic Life



Enjoying the scoliosis gala  
Kim Alfaro (Ortho Tech), Carrie Bartley (Research),  
and Linh Darnell (PA) – (all San Diego) Spine Gala –  
Las Vegas



Happy young orthopedic staff  
Dr. Upasani, John Schlechter (Children’s Hospital of  
Orange County), and Dr. Edmonds – POSNA – Atlanta



Catching up with friends at the reunion – Dr. Abby Allen (NYC), Dr. Meghan  
Imrie (Stanford) and Tracey Bastrom (Research-SD)



“Super relaxed – that’s why we like academic meetings”  
Dr. Edmonds, Dr. Abby Allen (NYC), Dr. Upasani, and Dr. Nirav Pandya (Oakland) – POSNA – Atlanta

*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