



Connections



A Newsletter from the Pediatric Orthopedic
Training Program

Children's Hospital – San Diego and University of California – San Diego

Issue 1 – 2005



Mubarak

Wenger

Chambers

Newton

Wallace

Lalonde

Pring



Message from the Director

Dennis R. Wenger

Introduction

We have decided to make a transition from publishing an annual report toward a newsletter which will be more timely. Our goal is to keep our friends and colleagues updated concerning ongoing activities as well as future plans for our training program. Our mission is to provide world class patient care, outstanding resident and fellow education, and to perform ongoing research related to children's orthopedic conditions.

Fellows

We are particularly interested in communicating with prior fellows who form a growing fraternity of outstanding pediatric orthopedic surgeons who practice in North America and throughout the world. We have a great interest in what our fellows do following their training as they move on to academic positions as well as private pediatric orthopedic practice, or a

combination thereof. We will feature one of our prior fellows in each edition of this newsletter.

Activities – Staff Notes

Many of our traditions continue with little change, whereas in other areas much has evolved. We continue to have outstanding fellows from throughout North America and the world. A brief introduction to our current fellows as well as our recent graduates is enclosed.

Changes

One change has been the addition of a cadre of nurse practitioners and physician assistants dedicated to children's orthopedics. We now have seven in this group and have trained them to be outstanding additions to our patient care – teaching mission.

In a symmetric manner we now also have

seven full-time pediatric orthopedic surgeons and with this growth have moved toward specialization within our group.

Dr. Scott Mubarak has a clinical and research interest in orthopedic trauma, muscle diseases, and complex lower extremity and foot disorders in children. He directs our clinical service (see column).

I (DRW) continue to have an interest in scoliosis as well as both a clinical and research interest in complex hip disorders in children.

Dr. Hank Chambers' specialties include the Motion Analysis Laboratory, sports medicine in children and adolescents, and cerebral palsy.

Dr. Peter Newton directs our scoliosis service and also is Director of Orthopedic Research. This includes leading the Children's Hospital Bio-mechanics Laboratory, which is world renowned for its research in all types of musculoskeletal conditions affecting children, with a special focus on spine deformity.

Dr. Doug Wallace has an interest in all of children's orthopedics and directs our orthopedic trauma service. He has a special interest in hand and upper extremity deformities.

Dr. Francois Lalonde, Assistant Director of Research, works closely with Peter Newton on many projects. He enjoys all areas of pediatric orthopedics with a special interest in hip problems of childhood.

Dr. Maya Pring, our latest staff addition, had a residency at the Mayo Clinic followed by a fellowship here in San Diego. She specializes in orthopedic trauma as well as hip disorders in adolescents, including the analysis and treatment of hip impingement syndromes.

Training – the San Diego Approach

We are a broadly talented group with an interesting heritage. Both Scott Mubarak and I had our fellowships at the Hospital for Sick Children-Toronto and brought many Toronto ideas to Children’s Hospital-San Diego. All of our remaining staff had some of their training in San Diego and to a certain extent have inherited “Toronto ideas”.

Hank Chambers was a fellow in San Diego, and after a brief stint with the U.S. Army in San Antonio, returned to join our group.

Peter Newton had his residency with us here at UCSD, followed by a fellowship in Dallas, and then returned to direct our scoliosis and research service. Doug Wallace had both his residency and fellowship in San Diego, with a short fellowship in hand surgery with Dr. Mary Beth Ezaki in Dallas. Francois Lalonde had his orthopedic training in Canada, followed by a fellowship here in San Diego. As noted previously, Dr. Maya Pring was Mayo Clinic trained, followed by a fellowship with us in San Diego.

One can then ask, does all of this interconnectedness lead to a unified, perhaps formulaic, method of practice or do multiple viewpoints remain? The answer is no, my view would be that we have a great balance. Although many of our intellectual concepts have been synthesized from those developed at the Hospital for Sick Children-Toronto, great variety remains in our system.

In our system each surgeon and their team functions in an independent manner. Indications are discussed weekly, including vigorous discussions regarding different methods for treating disease. Similarly, at the end of the week we review the results of all surgical procedures and again have open-minded commentary on what was achieved (or was hoped for!). All who know our conference system can confirm our truly open dialogue style. This approach assures a broad and varied approach to children’s orthopedic practice at Children’s Hospital-San Diego.

Clinical Volume and Orthopedic Training

Our combination of an outstanding, elective surgical schedule, focusing on reconstructive surgery, combined with a well-developed pediatric orthopedic trauma system, which cares for almost all major pediatric orthopedic injuries from our county of 3 million people, provides a great balance for orthopedic training.

Our outstanding orthopedic residents (from UCSD, San Diego Naval Training Program, Wilford Hall Air Force Training Program-San Antonio) are exposed to a great variety of pediatric

orthopedic conditions and have a comprehensive experience.

Our fellows, by gaining a full California medical license and hospital privileges, serve as junior colleagues in our practice. This assures that they can not only be well-trained in reconstructive orthopedics, but also in acute orthopedics including a primary responsibility mode (when on call) that has proven to be invaluable in preparing them for practice life. Interviewing the groups that hire our fellows confirm that the balance and responsibility that we provide is without peer.

We are part of the University of California – San Diego Orthopedic Department, led by Dr. Steve Garfin and we have a wonderful relationship with the department. Dr. Garfin supports our teaching and research mission, providing guidance, as needed, but without interference. The entire University of California – San Diego continues to grow by leaps and bounds as a major research university. They have just added a faculty member from MIT who becomes UCSD’s 16th Nobel laureate faculty member. We are happy to contribute in a small way to the mission of this great university.

Summary

We are proud of our training program whose reputation continues to grow. Please let us know what you think of the newsletter concept and give us ideas for future issues.

Dennis R. Wenger, M.D.
Director, Orthopedic Training Program
Children’s Hospital-San Diego

Clinical Professor of Orthopedic Surgery
University of California-San Diego



UCSD

The surest way to corrupt a young man is to teach him to esteem more highly those who think alike than those who think differently. – NIETZSCHE



Children’s Hospital – San Diego

Connections Photos

(also see page 20)



Atlanta – Portland – Singapore



“Really!... A 60° angle?”



“Carlos tells all”



“I say... go to California”



Happy prior fellows



“I recommend a motion study”



Notes from the Research Team

Our orthopedic research program is designed to keep our department at the forefront of advances in orthopedic treatment and technology. Four main centers of research have been established:

- The Center for Spinal Deformities
- The Center for Orthopedic Outcomes
(which includes The Trauma Research Center and The Hip Disorders Research Center)
- The Orthopedic Biomechanics Lab
- The Motion Analysis Lab/Center for Human Performance

Breadth of Program

The diversity in our research centers allows clinical, biomechanical and animal research methodologies. Our clinical research involves both retrospective and prospective protocols allowing ongoing subject enrollment and data collection at critical time points. Data collection is precise, efficient and utilizes new technologies (i.e. all research radiographic exams are digitally scanned and stored). Our research program has attracted internal funding as well as external grants from both industry and professional organizations.

Staffing

In addition to the seven attending orthopedic surgeons, orthopedic research is conducted by fellows, residents, students, other physicians and support staff. The process for fellow research has been perfected over the years, and the result has been successful completion of multiple presentations and manuscripts each year. This process involves engaging fellows in their research projects prior to their arrival, allowing for an expeditious initiation of their projects once they arrive.

In addition, international fellows as well as residents from UCSD, the US Navy, and US Air Force participate in research projects during their rotations here. Our department also attracts the interest and assistance of undergraduate and graduate/pre-medical students from multiple California colleges and universities.

Organization

Infrastructure is the key to our success. We have a lead coordinator for each center of research that also includes devoted research assistants and associates who specialize in our focused areas of orthopedic research (spine, hip, etc.) yet easily adapt to manage aspects for all areas. This infrastructure also includes internal resources for sophisticated statistical analyses, making certain that our research studies possess enhanced scientific validity. Our department also contains full time administrative support for budget and project management.

Our track record and organizational skills allowed us to be selected as the international research data coordination center for the Harms Study Project for Spinal Deformity Research. Dr. Peter Newton provides our orthopedic staff direction for this important, academically prolific center of research excellence.

Summary

We have a great track record (see publication/presentation sections) and a bright future. Please contact us if you wish to learn more about our program.

Michelle Marks, PT, MA
Research Coordinator

Tracey Gaynor

Current Fellows - Children's Hospital-San Diego



2004-2005 Pediatric Orthopedic Fellows

(Left to right: Mark J. Adamczyk, M.D. – Akron, Ohio; Roderick Capelo, M.D. - Fort Worth, Texas; Shyam Kishan, M.D. – Newark, New Jersey; Scott E. Van Valin – Pensacola, Florida; Jung Ryul Kim, M.D. Jeonbuk, South Korea)

Mark J. Adamczyk, M.D., a native of Michigan, attended undergraduate school at John Carroll University in Cleveland, where he played basketball. This was followed by medical school at Creighton University and then orthopedic residency at the Akron General Medical Center. As a resident, Dr. Adamczyk worked closely with Dr. Dennis Weiner, Dr. Pat O'Reilly, Dr. Bill Schrader and other well-known pediatric orthopedists who nurtured him in pediatric orthopedics.

Roderick Capelo, M.D., a native Texan, attended undergraduate school at the University of Texas at Austin. He then attended medical school at the University of Texas, Southwestern, followed by a residency at the John Peter Smith orthopedic program in Fort Worth. There he met Dr. David Brown, one of our prior fellows, who along with his colleagues developed Dr. Capelo's interest in pediatric orthopedics.

Shyam Kishan, M.D. initially had both his medical education as well as an orthopedic residency in India. He then emigrated to the USA and completed a full orthopedic residency in the New Jersey-Newark program under the direction of Dr. Fred Behrens. After his "double training" he made a decision to pursue pediatric orthopedics.

Scott E. Van Valin, M.D. is well-known to us. A native of Wisconsin, Scott completed his undergraduate education at the University of Wisconsin-Milwaukee and his medical education at the Medical College of Wisconsin. He then entered the Naval Hospital Orthopedic Training Program here in San Diego where as a resident he rotated through our hospital and we learned to know him well. Following residency training he served for two years at the Naval Hospital in Pensacola, Florida. During this time he served as a surgeon in Iraq, which provid-

ed him a great depth of experience. He then selected our program for his pediatric orthopedic training.

Jung Ryul Kim, M.D., comes to us from Jeonbuk, South Korea, where he graduated from the Chonbuk National University Medical School. He has a special interest in orthopedic trauma in children as well as spine and hip disorders in children. He will spend a full year with us, doing both clinical and research work.

As always, we have an outstanding group of fellows. With the training received here they will have rewarding careers and help to fill a strong national need for skilled surgeons who can provide orthopedic and scoliosis care for children.

2004 Fellows

Our recent fellow graduates are off to a variety of careers in several locations throughout the world.



Jay Albright, M.D., a graduate of the University of Iowa orthopedic training program, elected to take a second fellowship in sports medicine with Frank Noyes in Cincinnati. This appears to be a future trend, (to have dual fellowship training – very common in Canada). Jay has already accepted a position with the Arnold Palmer Children’s Hospital in Orlando, Florida, where he will work with Chad Price in developing a pediatric sports medicine center.



Ryan Goodwin, M.D., trained at the Cleveland Clinic and came here for his pediatric orthopedic and scoliosis fellowship. He now has a position in the Division of Pediatric Orthopedics at the Cleveland Clinic.



Sohrab Gollogly, M.D. trained at the University of Utah and came here for further training in children’s orthopedics and scoliosis surgery. He has entered a spine practice in Monterey, California.



Stefan Parent, M.D., trained in the University of Montreal program where he became immensely interested in children’s orthopedics due to his work at the St. Justine Children’s Hospital training program. He came here for a fellowship in pediatric orthopedics with a special focus on spine research. Currently he is in Paris,

France, working in a national spine research center as well as working at the Hospital St. Vincent de Paul (Children’s Hospital in Paris). He then plans an academic career back in Montreal.



Michael Rohmiller, M.D., came here from the Vanderbilt University orthopedic training program and completed his fellowship here in pediatric orthopedic and scoliosis surgery in mid-2004. He then took an additional six month fellowship in adult spine surgery with Dr. Behrooz Akbarnia here in San Diego, while his wife completed the world-renowned musculoskeletal radiology fellowship run by Dr. Don Resnick. Dr. Rohmiller has accepted a pediatric orthopedic position in Cincinnati, Ohio.

We are proud of these outstanding young surgeons. Interestingly, three of the five are doing more than one fellowship year, perhaps reflecting the growing complexity of our specialty and thus bringing into focus the many questions related to how pediatric orthopedic and scoliosis training will eventually be standardized.



Clinical Program Director's Notes

Scott J. Mubarak

Children's Hospital continues to have busy clinical and surgical services with a high volume of both elective and acute orthopedic cases. This allows excellent training not only for our orthopedic residents, who come here from UCSD as well as other programs, but also for our outstanding fellows. In addition to training in advanced elective orthopedics, we allow them independent staff responsibility in the acute area which prepares them well for entering all types of orthopedic practices. Statistics for the last year include 46,382 outpatient visits and 7,048 surgical procedures.

Another interesting part of my year has been serving as President of the Pediatric Orthopedic Society of North America for 2004-2005 and I want to give our former fellows an update on POSNA activities. We have many exciting educational opportunities that will be occurring in 2005. Former fellow Steve Frick (1997-98) has put together an outstanding program at the Academy on Specialty Day, Feb. 26, 2005, in Washington, D.C. This includes a special tribute to Mercer Rang on the growth plate. Steve's speakers will cover all types of injuries to the growth plate and the speakers include Jon Davids (1990-91) and Karl Rathjen (1995-96). You can see Steve's program on the POSNA website (www.POSNA.org).

Our annual POSNA meeting will occur in Ottawa, Canada, May 11-15, 2005, with prior fellow Jon Davids (1990-91) serving as program chairman for the one-day course on DDH. He has gathered an international faculty, including Reinhold Graf from Austria and Ted Harcke from DuPont Institute, the innovators of hip ultrasound. The complete program is also available thru the POSNA website.

Peter Newton, (program chairman for the POSNA meeting) and his committee selected outstanding papers (90+) as well as posters and e-posters for all of us to see. More than 425 abstracts were reviewed. The program committee has also added an afternoon symposia on topics including Sports Medicine, chaired by Kevin Shea (1997-98) and Min Kocher, Pediatric Spine, Practice Management and an Ultrasound Workshop (Jon Davids, Chair, plus Drs. Harcke and Graf).

My presidential guest speaker will be Dr. Dennis Wenger, who will present "The Genealogy of Pediatric Orthopedics". This is an exciting program you won't want to miss. Do plan to attend POSNA in Ottawa where we will be having our annual San Diego Fellowship alumni cocktail party.

The 2006 POSNA meeting will be held in San Diego from May 3-6, 2006, with Hank Chambers (1989-90) serving as local host. Mark that date on your long-term calendars. Many exciting events are planned and of course many of our alumni will return.

Scott Mubarak, M.D.
Clinical Program Director

Notes from Former Fellows

The San Diego fellowship began in the mid-1980's and we now have fellows who practice throughout the world. In this column we have asked prior fellows to comment on their training in San Diego and how they have applied their training in their subsequent careers. Jon Davids, M.D., who works at the Greenville Shriners Hospitals, provides his perspective for this issue. – DRW



Jon Davids MD

“Teachers open the door. You enter by yourself” CHINESE PROVERB

I had been a Latin American Studies major as an undergraduate at Brown University, and in medical school at Harvard my “extra” time was devoted to issues of social responsibility, like sending industry-supplied stethoscopes to Central America and protesting against nuclear war in Boston and Washington. It wasn't until my residency at the University of Colorado Health Sciences Center in Denver that I first recognized my interest in biomechanics and clinical research. During the second year of my residency I spent 6 months on rotation at Rancho Los Amigos Medical Center in Los Angeles. At Rancho I worked with Mark Hoffer and Jacqueline Perry, where I first learned about normal gait and the function of the Kinesiology Laboratory.

I returned to Colorado and followed with a rotation at The Denver Children's Hospital, where I worked with Bob Eilert. By this time, my career choice was clear. It was an interest in quantitative gait analysis that first led me to seek a fellowship in pediatric orthopaedics at the Children's Hospital and Health Center in San Diego.

As I was applying for a fellowship, Dennis Wenger came to Denver to be the Visiting Professor at the Orthopaedic Day at Fitzsimmons Army Medical Center. I was both entertained and inspired by his lectures. We were introduced and I subsequently schemed with my mentors in Denver about how they might put

in a good word for me with him. I first met David Sutherland and Scott Mubarak during my fellowship interview in San Diego. I connected with Dr. Sutherland immediately, appreciating both his calm demeanor and passionate commitment to his patients and profession. My respect for him would only grow as the years went by. We would share many wonderful experiences together, including traveling to Europe to teach about quantitative gait analysis.

My fellowship year was everything that I had hoped it would be, and more. The academic atmosphere and values in San Diego taught me much about the process and practice of clinical research. The education and exposure that I received in these areas while in San Diego would determine much about my future life as a pediatric orthopaedic surgeon. The year was also marked by many wonderful friendships, particularly with my “fellow Fellow,” Francisco Valencia. We came from different backgrounds, but shared many common values, and still have a special relationship that I value deeply.

Following my fellowship year, I initially joined the pediatric orthopaedic group at Children's Hospital-San Diego. My mission was both challenging and enviable, to fill the shoes of Dr. David Sutherland, who had just retired from his clinical practice. I became a consultant to the Motion Analysis Laboratory, where my training in quantitative gait analysis and the manage-

ment of children with cerebral palsy continued. In addition, I inherited the “Mexico Free Service”, based in Tijuana, which Dr. Sutherland had been running for a number of years. I learned that a Mexican pediatric orthopaedist, Carlos Gutierrez Loya, ran a weekly clinic in the Tijuana hospital on the days that we were not there. We finally met, recognized our common interests, and coordinated our efforts to create the “Binational Pediatric Orthopaedic Program.”

It was easy for me to appreciate that a lifetime’s worth of opportunities and challenges was available to me in San Diego, and initially I intended to stay there indefinitely. However, after 2 years, family considerations led me to make one of the most difficult decisions of my life, which was to leave San Diego and move to the Southeast. I took a position at the Shriners Hospital in Greenville, South Carolina. I chose this institution based upon the Chief of Staff, Ben Allen, whose commitment to developing an academic program closely reflected my personal mission of patient care, teaching, and research. In addition, the Shriners agreed to fund a motion analysis laboratory!

I have now been here for 11 years, and have found the work to be challenging and satisfying. The hospital covers 6 states in the region, resulting in a significant concentration of pediatric orthopaedic pathology, which provides an opportunity to quickly develop clinical expertise in a number of areas. The Motion Analysis Laboratory is completely integrated into the clinical program, and all children with cerebral palsy having surgery to improve ambulation receive quantitative gait analyses before and 1 year after surgery. Children with myelodysplasia, clubfoot, and limb deficiency are also studied in the laboratory. Research funding by the Shriners Hospital for Children system has supported my involvement in a number of interesting and exciting projects over the years. Work coming out of the Motion Analysis Laboratory has resulted in a steady flow of international visitors to my hospital, and many invitations for me to travel and lecture around the world.

Everything that I have accomplished here has been built upon a foundation of ethical and intellectual principles that was firmly established during my time in

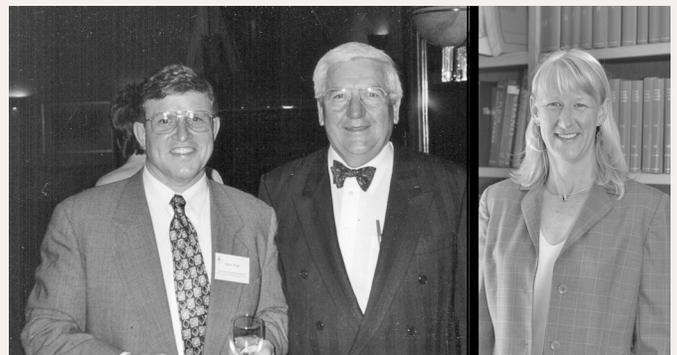
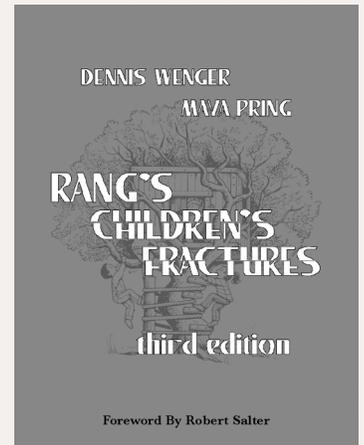
San Diego. My mentors have, and continue to, open doors for me. At this point in my career I realize that my gratitude alone is not enough to repay them, but rather that it is now my responsibility to open doors for those who will follow behind me.

Jon Davids, M.D.
Greenville, South Carolina
(Fellow – 1990-91)

Breaking News – the “Classic” returns!

Keep your eyes open for the third edition of a classic. Dr. Dennis Wenger, Dr. Maya Pring and Dr. Mercer Rang have just completed the third edition of the classic text “Children’s Fractures”.

Expanding on Rang’s simple, humorous, and practical approach, this new edition, produced here at Children’s Hospital – San Diego, presents the latest approach to practical fractures treatment (special chapters – “orthopedic language”, “conscious sedation – avoiding the O.R.”, “physician extenders in orthopedic practice”, “fracture epidemiology – risk homeostasis”) – published by Lippincott, Williams and Wilkins, c. 2005.



Addendum: Sadly, Mercer passed away before the completion of this project. His spirit remains with us.

Spine Service

Peter Newton



The Spine Service remains active clinically as well as in research. The clinical service consisting of Drs. Newton, Wenger, and Mubarak provides opportunities for fellows and residents to rotate on each of their services. Amy Kager is our nurse who provides scoliosis coordination for both preoperative and postoperative care. There are four to five scoliosis clinics per week in both the office and hospital clinic with a wide spectrum of pathologies addressed. Idiopathic scoliosis remains our most common diagnosis; however, neuromuscular and congenital deformity make up a significant portion of our scoliosis practice.

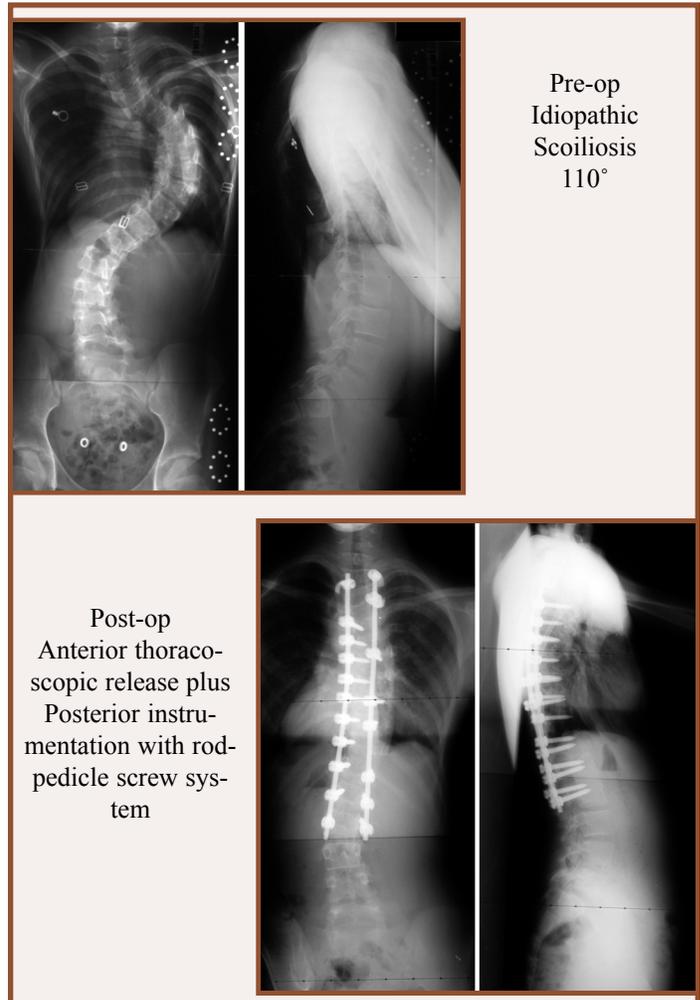
Last year's scoliosis surgical volume included 29 anterior approaches and 92 posterior procedures as well as multiple spine procedures for spondylolisthesis and other conditions. The operative techniques employed continue to be advanced in concert with active research. Minimally invasive options, in addition to segmental pedicle screw fixation are methods that have been employed for optimizing surgical outcomes. Thoracoscopic release and instrumentation cases now number greater than 200 and the outcomes for each of these operations remain quite promising.

Posterior instrumentation with segmental pedicle screw fixation and increase in use of osteotomies has resulted in increased correction of even the largest deformities. A recent example demonstrates this adolescent idiopathic scoliosis patient who had gone untreated until presenting with a 110° thoracic scoliosis. After thoracoscopic anterior release and posterior instrumentation with pedicle screws, her deformity was nearly completely corrected.

All surgical patients continue to be enrolled in prospective studies with the coordination of the multi-

center Harms Study Group under Michelle Marks' guidance. Research also is progressing in the areas of spinal biomechanics, as well as fusionless scoliosis correction with substantial involvement by Christy Farnsworth and Andrew Mahar.

Peter O. Newton, M.D.
Director, Spine Service
Director of Orthopedic Research





Orthopedic Biomechanics Research Center

The Orthopedic Biomechanics Research Center (OBRC) at Children's Hospital – San Diego was founded in November of 1998 with an initial research focus toward adolescent idiopathic scoliosis. At its inception, the OBRC had one full time engineer. The facility has now grown to nearly five full time engineers with a wide range of expertise and investigates a myriad of pediatric and adult orthopedic conditions.

Research Focus

Adolescent spinal deformity remains the major focus of the facility for evaluating varying types of materials and dimensions for spinal fusion while also analyzing potential fusionless scoliosis correction constructs. However, significant efforts have also been made toward understanding the biomechanical effects of various surgical techniques for stabilizing adolescent fractures of the humerus, femur and tibia; as well as exploring the biomechanical effects of pediatric hip deformity.

The OBRC retains a close collaborative research effort with the Department of Orthopedic Surgery at the University of California – San Diego. Spinal research in the areas of adult deformity, spinal trauma and vertebroplasty/kyphoplasty comprise the largest facet to this collaboration. However, biomechanical research is also being conducted to evaluate novel devices and materials for sports medicine applications.

New Interests

One of the newest areas of collaborative research is in the field of adult trauma stabilization, including proximal femoral fractures and distal humerus fractures. Recent partnerships with other academic centers include the study of novel polymers for vertebroplasty

with the Mayo Clinic and the computational study of bone growth and remodeling with San Diego State University.

These cumulative research efforts have been accomplished by teaming orthopedic surgeons and biomedical engineers with orthopedic residents and fellows. In addition, engineering interns and medical students are recruited to assist with specific tasks associated with each project.

Publications

This multi-layered approach has yielded significant publication success with manuscripts appearing in *Spine*, *Journal of Pediatric Orthopaedics*, *Clinical Orthopaedics and Related Research*, *American Journal of Sports Medicine*, *Journal of Shoulder and Elbow Surgery*, *Medicine and Science in Sports and Exercise*, *Journal of Foot and Ankle Surgery*, *Arthroscopy* and the *Journal of Applied Biomechanics*.

Industry Relations

This solid reputation for quality research has led to diverse industry partnerships with such entities as Depuy Spine, Medtronic Sofamor Danek, Wright Medical, Nuvasive, Stryker Endoscopy, Triage Medical, DJ Orthopaedics, Inion and Zimmer. The relationships the OBRC has with industry are as a strictly objective testing facility that incorporates multiple technologies into study protocols to best elucidate the biomechanical effects of various implants used in orthopedic surgery.

Andrew Mahar, M.S.
Biomechanical Engineer

Hip Research Team



Following the model of the highly successful spine clinical and research team currently led by Dr. Newton, a focus group of individuals with special interest in hip conditions was formed in 2004. The group includes pediatric orthopaedic surgeons in our practice, a hip clinical/research coordinator and engineers from the biomechanics laboratory. The group meets regularly to discuss our approach to various hip conditions and discuss ongoing or future fellow and/or staff hip research projects.

Clinical and radiographic data for patients with common hip conditions such as Perthes, DDH and SCFE is collected prospectively to maintain a comprehensive database. The group is fortunate to have a close working relationship with the biomechanics laboratory to support research in this area. Current topics of interest to the group include:

- Analysis of outcome of patients with Perthes disease who have undergone triple innominate osteotomy
- MRI classification of Perthes disease
- Early Surgical Treatment of patients with residual acetabular dysplasia
- Early and late treatment of patients with slipped capital femoral epiphysis
- Femoral-acetabular impingement and its treatment
- Bioabsorbable screw fixation of pelvic osteotomies
- Evaluation and treatment of protrusion acetabuli
- Functional gait analysis of patients with various hip conditions

Grant funding is available to support our research initiatives. Many past and current fellows have taken advantage of this strong clinical and research interest in hip conditions to further their knowledge and experience in performing various pelvic and femoral osteotomies.

Multiple fellow hip research projects have gone on to be presented at major pediatric orthopaedic meetings such as POSNA and have been published in peer-reviewed journals. In addition, the hip team has also been involved in setting up a popular and well-attended POSNA tutorial on pelvic osteotomies.

Hip Research Team:

Dennis R. Wenger,
François D. Lalonde,
Maya E. Pring





Sports and Motion

Henry Chambers



Our Children's Orthopedic Specialist Foundation has taken over the management of the Motion Analysis Laboratory and we continue to do clinical studies for complicated patients and for our ongoing research studies. We have research with the Allergan Corporation looking at BOTOX, an OREF grant looking at the kinematic effects of hamstring vs bone-tendon-bone grafts for ACL reconstruction and we just received a multiyear grant from Major League Baseball to look at the shoulder in pitchers.

Our sports medicine program is growing. Doug Wallace, Maya Pring and I are all interested in sports and our number of cases is growing. We now do 1-2 ACL reconstructions and 5-7 meniscus surgeries per week. The number of shoulder cases is increasing as well. At the suggestion of Dr Wenger, we are working on a patellofemoral project looking retrospectively and prospectively at children with anterior knee pain. The growth in female athletic participation has led to many new patellofemoral issues with acute and recurrent patella dislocation a common problem. We perform more than 100 patellar realignment procedures a year.

Our interest in treating children with cerebral palsy is still strong. I serve on the board of the American Academy for Cerebral Palsy and Developmental Medicine and continue to be active at their annual meeting and in multicenter studies. In addition to the gait lab, we are doing research on botulinum toxin and health related quality of life after orthopedic interventions. We are fortunate to have patients from all over the United States see us in consultation with many of them returning for reconstructive surgery.

I have many ways to keep busy. I was elected Chief of Staff of Children's Hospital in January 2004 and have one more year to go. This allows me to work with the

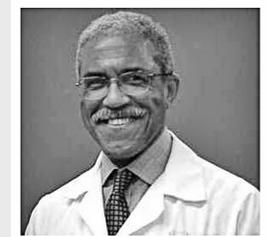
hospital administration and the medical staff in planning for the future. We were fortunate that the voters of California passed a referendum this fall which will provide funding for hospital expansion and development. The money will be used to build a new Children's Convalescent Home, 18 new operating rooms, and two floors of beds (ortho should get one of the floors).

Our programs continue to grow on multiple fronts. We are thankful for a clinical and research environment that supports this growth.

Hank Chambers, M.D., Chief of Staff
Children's Hospital and Health Center

Mark Your Calender

**2005 David Sutherland
Visiting Professorship
April 21-22, 2005**



Alvin Crawford, MD

We invite all prior fellows and freinds to attend this annual educational event. Our 2005 David Sutherland Visiting Professor is Alvin Crawford, Professor of Orthopedic Surgery at the University of Cincinnati and Chief of the Children's Orthopedic Service at the Children's Hospital of Cincinnati. This will be a wonderful educational experience.

A View From Afar

(Scott Nelson, M.D., was a recent fellow at Children's Hospital-San Diego. He took his fellowship in preparation for leaving his North American practice to develop a clinical and teaching program in the Dominican Republic. We have asked him to describe his thinking in making this transition.– DRW)



Scott Nelson MD and Patient

In 1934 after graduating from Loma Linda University my grandfather set out to the Belgian Congo with his wife and children. It was in an isolated part of central Zaire where he spent over 25 years of his career as a surgeon and built an entire medical complex which still exists today. After visiting my grandparents in Africa I was inspired by this life of adventure and helping others. During my childhood I also had the opportunity to live in several underprivileged countries for short periods of time while my father worked as a dentist.

After finishing my orthopedic residency at Loma Linda in 2001 my wife and I and our 2 boys traveled to the Dominican Republic (DR) to do charity orthopaedic work for two weeks at a hospital near Santo Domingo. We were introduced to this hospital by an orthopaedic surgeon who had been going there on short term trips for several years. My wife had never been quite as excited about overseas medical work as I was but after spending a short period of time at this hospital and seeing the changes that could be made for these people she was totally convinced that we needed to stay for longer.

After my first trip to the DR I was inspired to do a pediatric orthopedic fellowship and fortunately was able to get a position at Children's Hospital-San Diego. It was a real privilege to be a part of this fellowship and the experience I gained in San Diego gave

me the skills and knowledge I need to function in this environment. This applies to the medical, academic, and administrative responsibilities I have here. The complexity and number of cases that we are exposed to during the fellowship is truly unparalleled.

CURE International

CURE International is a nonprofit organization based in Pennsylvania which establishes and operates teaching hospitals in the developing world for the medical and spiritual healing of disabled children and their families. In 1996 CURE was established and in 1998 the first CURE hospital was opened in Kijabe, Kenya. Today they operate 8 hospitals in the developing world and several more are being established. These hospitals have a strong emphasis on pediatric orthopaedic surgery and the training of local surgeons. CURE takes and shares first world medical techniques, technology and expertise to poor, undeveloped countries.

In 2003 they opened a new hospital in Santo Domingo, Dominican Republic. In need of a US trained orthopaedic surgeon to operate their hospital and to train local surgeons I have agreed to work with the organization on a permanent basis in the DR. The CURE hospital is a children's hospital with approximately 30 beds and 2 operating rooms and is located in the center of Santo Domingo which is the capital city and has a population of nearly 3 million people.



CURE Hospital – Santa Domingo, Dominican Republic

Goals and Plans

Many needs can be met with short term trips to places such as this. However, the reason for relocating on a more permanent basis and making obvious sacrifices is to build the necessary relationships to provide training for local surgeons and other medical personnel. This also greatly enhances ones ability to treat more complex cases which require continued follow-up and to perform various types of deformity correction. There are 9 medical schools in the city of Santo Domingo and 3 orthopaedic surgery residency programs. Orthopaedic surgery is a 3 year program and the level of training is far inferior to most of our programs in the states. Work is in progress to set up rotations at our hospital with the residents from the various orthopaedic surgery residency programs, and eventually to create a pediatric orthopaedic fellowship. This will also involve an ongoing international exchange with residents and professors from the United States.

Plans are in progress for several residency programs in the US to send residents to work on a short term basis and gain a unique experience. Visiting professors are also a valuable asset to our program and help provide an excellent international educational exchange. We are able to schedule elective cases in various subspecialty areas during periods of time when subspecialists can visit for short periods of time and thus make efficient use of their donated time.

Santo Domingo has a rich history as it dates back to the late 1400's when Columbus first arrived in the new world and the original colonial city provides an interesting place for people to visit. Short term mission trips to the DR would also not be complete without a visit to one of the many fine beach resorts, golf courses, or world class windsurfing and kite surfing beaches in the north.

Summary

In closing I want to again thank the staff in the Orthopedic Department at Children's Hospital – San Diego who run a world class training program. They provided a level of patient care, teaching, and research that are the best in the world. Each day I use concepts that I learned as a fellow.

Thank you!

Scott Nelson, M.D.
Santo Domingo, Dominican Republic
(Fellow 2003-2004)

*Real unselfishness consists in sharing
the interests of others*
SANTAYANA

Documentation (Our Publications)



Our progress as a center directed to the future mandates both research and publications that document our work. We continue as one of the top children's hospitals in the world for publications in the orthopedic literature. This list of a single year's publications documents this trend.

Mubarak, SJ, Bialik, V: Arnold Pavlik: The Man and His Method. JPO, 23:342-346, 2003.

Roposch, A, Scher, D, Mubarak, S, Kotz, R: Die Behandlung der Fubdeformitat bie Duchenne Muskeldystrophie. Zeitschrift fur Orthopadie und Grenzgebiete, 141:44-48, 2003.

Weinstein, SL, Mubarak, SJ, Wenger, DW: Developmental Hip Dysplasia and Dislocation, Part I. Selected Instructional Course Lecture, AAOS. JBJS, 85-A:1824-32, Sept. 2003.

Weinstein, SL, Mubarak, SJ, Wenger, DR: Developmental Hip Dysplasia and Dislocation, Part II. Selected Instructional Course Lecture, AAOS. JBJS, 85-A:2024-2035, 2003.

Barmada, AB, Gaynor, T, Mubarak, SJ: Premature Physeal Closure Following Distal Tibial Physeal Fracture: A New Radiographic Predictor. JPO, 23:733-739, 2003.

Newton, P.O. , Faro, F, Wenger, D, Mubarak, S.: Neuromuscular Scoliosis. In: Rothman-Simeone The Spine, 5th edition, W.B. Saunders Co., Submitted 2003.

Wenger, D.R. and Bomar, J.D.: Human Hip Dysplasia: Evolution of Current Treatment Concepts. J Orthop Sci (The Japanese Orthopaedic Association) 8:264-271, 2003.

Wenger, D.R.: Spine Tumors in Childhood and Adolescence. In: Spinal Deformities, The Comprehensive Text; Thieme, New York, 2003.

Wenger, D.R.: Treating Pediatric Spine Deformity. In: Orthopedics Today; Vol 23, #10, Oct 2003.

Newton, P.O. and Wenger, D.R.: Etiology, Natural History and Nonoperative Treatment. In: Seminars in Spine Surgery – Pediatric Spinal Deformity. W.B. Saunders, Philadelphia, PA, 15:186-198, 2003.

Marks, M.C., Stanford, C.F., Mahar, A.T., Newton, P.O.: Standing Lateral Radiographic Positioning Does Not Represent Customary Standing Balance. Spine, 28:1176-82, 2003.

Kim, C.W., Smith, J.M, Lee, A., Hoyt, D.B., Kennedy, F., Newton, P.O., Krakun, M; Meyer, R.S.: Personal Watercraft Injuries. Journal of Orthopaedic Trauma 17:571-573, 2003.

Faro FD, White KK, Ahn JS, Oka, RS, Mahar, AT, Bawa M, Farnsworth CL, Garfin SR, Newton PO.: Biomechanical analysis of anterior instrumentation for lumbar corpectomy. Spine 2003;28:E468-71.

Sink, E.R., Newton, P.O., Mubarak, S.J., Wenger, D.R.: Maintenance of Sagittal Plane Alignment Following Surgical Correction of Spinal Deformity in

- Patients with Cerebral Palsy. *Spine*, 28:1396-1403, 2003.
- Newton, P.O.: Thoracoscopic Approach for Pediatric Deformity. In: *Principles and Practice of Spine Surgery*, Saunders, 2003.
- Newton, P.O.: Open Thoracic and Lumbar Spine Surgical Approaches. In: *Spinal Deformities. The Comprehensive Text*, Thieme New York, 2003.
- Newton, P.O.: Thoracoplasty. In: *Spinal Deformities. The Comprehensive Text*, Thieme New York, 2003.
- Newton, P.O.: Endoscopic and Mini-Open Approaches to the Spine. In: *Spinal Deformities. The Comprehensive Text*, Thieme New York, 2003.
- Newton, P.O.: Thoracoscopic Approach for Deformity with Frontier Instrumentation. In: *Endoscopic Spine Surgery and Instrumentation*, Thieme, New York, Submitted 2003.
- Lenke, L.G. and Newton, P.O.: Guest Editor of Seminars in Spine Surgery – Pediatric Spinal Deformity. *W.B. Saunders, Philadelphia, PA, Volume 15, No. 3, Sept. 2003.*
- Lenke, L.G., Betz, R.R., Harms, J., Clements, D., Lowe, T., Newton, P.O.: New Classification System of Adolescent Idiopathic Scoliosis: Treatment Directed. In: *Seminars in Spine Surgery – Pediatric Spinal Deformity. W.B. Saunders, Philadelphia, PA, 15:199-213, 2003.*
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- Newton, P.O. and Mohamed, F.: Thoracoscopic Approach for Spinal Conditions. In: *Rothman-Simeone The Spine, 5th edition, W.B. Saunders Co., Submitted 2003.*
- Newton, P.O., Lee, S.S., Mahar, A.T., Farnsworth, C.L., Weinstein, C.H.: Thoracoscopic Multilevel Anterior Instrumented Fusion in a Goat Model. *Spine*, 28:1614-1620, 2003.
- Newton, P.O., Marks, M.C., Faro, F., Betz, R., Clements, D., Haher, T., Lenke, L, Lowe, T.: Use of Video-Assisted Thoracoscopic Surgery to Reduce Perioperative Morbidity in Scoliosis Surgery. *Spine*, 28:249-54, 2003.
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- Marks MC, Alexander J, Sutherland D and Chambers HG: Clinical Utility of the Duncan Ely Test for Rectus Femoris Dysfunction during the Swing Phase of Gait. *Developmental Medicine and Child Neurology. 45: 763-768, 2003*
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- Thomas, K.C.; Lalonde, F.; O’Neil, J.; Letts, R.M.: Multiple-Level Thoracolumbar Burst Fractures in Teenaged Patients. *J Pediatr Orthop* 2003;23:119-23.



Argentina



Chile

Spreading the Word - Global Outreach

(Our faculty members continue to be invited lecturers throughout the world. This allows us to propagate the research ideas and methodologies which have been developed and used at Children's Hospital-San Diego. Of course, as all of you who travel know, of equal importance are the relationships that are developed on these trips with the international pediatric orthopedic community as well as the new techniques and methods that we learn about and bring back to San Diego.)



Milan



Boston

Scientific presentations over the last year occurred in multiple venues throughout the world. Please refer to our website for a complete listing of all presented topics.

www.childrensspecialists.com

Henry G. Chambers, M.D.

POSNA Amelia Island, Florida, May 2003

2003 Consensus Meeting on the Use of Botulinum Toxin A in Children with Cerebral Palsy Colorado Springs, CO, August 2003

American Academy for Cerebral Palsy and Developmental Medicine Montreal, Quebec, September 2003

POSNA Specialty Day American Academy of Orthopedic Surgeons San Francisco, CA, March 2004

Residents Research Day Walter Reed Army Medical Center Washington, DC June 2004

Residents Research Day Walter Reed Army Medical Center Washington, DC June 2004

Francois D. Lalonde, M.D.

Western Orthopaedic Association, San Francisco, 2004 Annual Meeting

Pediatric Orthopaedic Society of North America, St. Louis, 2004 Annual Meeting

Scott J. Mubarak, M.D.

Sociedad Mexicana de Ortopedia Pediatrica, Veracruz, Mexico, September 12-15, 2003:

IPOTT Ann Mtg, Boston, MA, Oct. 16, 2003.

DuPont Institute Orthopedic Seminar, Dupont Institute, Wilmington, DE, October 24-25, 2003

6th Annual International Pediatric Orthopedic Symposium, San Diego, CA, December 3-7, 2003

American Academy of Orthopedic Surgeons Annual Meeting, San Francisco, March 10-13, 2004

European Pediatric Orthopedic Society Annual meeting, Geneva, Switzerland, March 31, 2004.

POSNA Annual Meeting, St. Louis, MO, April 28, 2004.

IV Congresso Gaucho de Ortopedia e Traumatologia, Porto Alegre, Brazil, May 13-15, 2004.

Peter O. Newton, M.D.

10th International Meeting on Advanced Spine Techniques, Rome, Italy, July 10-12, 2003.

38th Annual Meeting of the Scoliosis Research Society, Quebec City, Canada, September 10-13, 2003.

18th Annual Meeting of the North American Spine Society, San Diego, CA, October 21-25, 2003.

71st Annual Meeting of the American Academy of Orthopaedic Surgeons, San Francisco, CA, March 10-14, 2004.

2004 Annual Meeting of the Pediatric Orthopedic Society of North America, St. Louis, MO, April 27 – May 1, 2004.

31st Annual David H. Sutherland Pediatric Orthopedic Visiting Professorship, May 13-14, 2004.

International Research Society for Spinal Deformities, June 10-12, 2004, Vancouver, BC Canada.

C. Douglas Wallace, M.D.

Orthopedic Grand Rounds UCSD School of Medicine, October 15, 2003

Pediatric Grand Rounds UCSD Medical School, December 15, 2004

Pediatric Orthopaedic Society of North America, St. Louis, MO. April 28, 2004

Dennis R. Wenger, M.D.

Helsinki Summer Course. Helsinki, Finland. July 28-31, 2003

IPOTT Annual Meeting. Boston, MA. Oct. 16-18, 2003

6th Annual International Pediatric Orthopedic Symposium, San Diego, CA, December 3-7, 2003

Mexican Society for Surgery of the Hip Puebla, Mexico. February 4-9, 2004

AAOS Annual Meeting. San Francisco, CA. February 20-22, 2004

European Pediatric Orthopaedic Society, Pre-meeting Symposium Geneva, Switzerland. March, 2004

31st Annual David H. Sutherland Pediatric Orthopedic Visiting Professorship, May 13-14, 2004.

Arthur Thibodeau Visiting Professorship Tufts University School of Medicine, Boston, MA. June 17-18, 2004

Resident Life



The training program at Children's Hospital-San Diego has a distinguished record for outstanding resident training in pediatric orthopedics. By our clarifying the magic of children's orthopedics, many of our residents have chosen to take fellowships and become pediatric orthopedic surgeons. They see the wisdom of entering the last orthopedic specialty which allows a global orthopedic approach. The fulfillment of a full operative day that includes a scoliosis corrective fusion, a hip osteotomy, and a triple arthrodesis (foot) is priceless! We applaud the residents who have chosen to take a fellowship in our discipline.

Our residents come from several institutions, including the University of California-San Diego, the San Diego Naval Medical Center and the Wilford Hall Air Force training program (San Antonio, Texas).

Our patient volume allows outstanding resident education in the areas that a resident should learn if they plan a general orthopedic practice (or to pass their OITE and board exams). Our high volume assures that both residents and fellows get an excellent surgical experience.

We salute the orthopedic residents who provide the intellectual challenge that makes orthopedic teaching a rewarding experience.

Connections

As time passes we see many changes in the Children's-San Diego orthopedic education program. This corner of the newsletter will be dedicated to updating you on the comings and goings of friends, new and old. The past year brought several changes. We were sad to say good-bye to one of our most familiar faces. Phil Stearns (nurse practitioner) helped to form our sophisticated NP/PA children's orthopedic fracture care system, which included the development of fracture reduction skills in our physician extenders. Phil has moved to Atlanta, for family reasons, and has assumed a similar position with one of our prior fellows, Dr. Tim Oswald. Phil is truly missed and we thank him for his tremendous contribution to our program during his time here.

Perhaps something in the water in San Diego has sparked a recent baby boom. A current fellow, Dr.

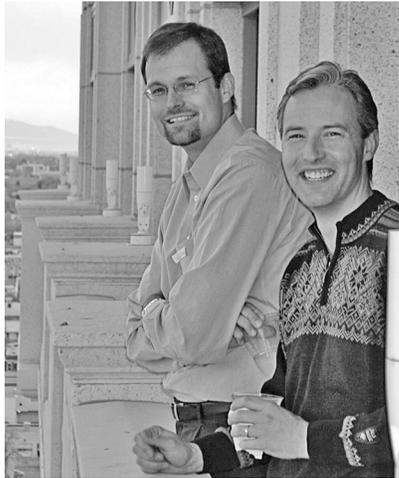
Mark Adamczyk, and his wife started the year with the birth of their second child (a boy). The Phil Stearns family welcomed their second son in September just before departing from San Diego. Two sets of twins were born: a boy and a girl for Linh Darnel (P.A.) in October 2004 and a boy and a girl for Dr. Francois Lalonde in January 2005. Congratulations to all!

We love to stay in touch with the alumni of our fellowship program. The annual Children's-San Diego fellow reunion at POSNA has become an event we all look forward to, allowing us to catch up on each others lives. We are fortunate to have had exceptional fellow trainees and take pride in following your outstanding professional and personal achievements.

L.C./K.N./J.D.B.



Memories of San Diego



"We advise hedge funds"



The boss and a loyal subject



"Son... an ortho career requires discipline"



"This Orthopedics is fun!"



"Any more Scotch?"