

ANNUAL REPORT 2010-2011

DEPARTMENT OF

CHILDREN'S SURGERY



# TABLE OF CONTENTS

INTRODUCTION	1
<b>DIVISIONAL REPORTS:</b>	
THE HEART INSTITUTE	2
MATERNAL FETAL MEDICINE	18
NEUROSURGERY	24
OPHTHALMOLOGY	34
ORTHOPEDICS AND SCOLIOSIS	38
OTOLARYNGOLOGY	52
SURGERY AND TRAUMA	66
UROLOGY	72

RADY CHILDREN'S SPECIALISTS OF SAN DIEGO,  
A MEDICAL FOUNDATION  
RADY CHILDREN'S HOSPITAL-SAN DIEGO  
UNIVERSITY OF CALIFORNIA, SAN DIEGO

ANNUAL REPORT 2010-2011 DEPARTMENT OF PEDIATRICS



DEPARTMENT OF CHILDREN'S SURGERY

# Dear Friends and Colleagues,

We are excited to present the second annual Rady Children's Specialists of San Diego, A Medical Foundation, Department of Children's Surgery 2010-2011 report. This report is a culmination of the accomplishments of our surgeons and surgeon-scientists following the inception of the medical foundation at Rady Children's Hospital-San Diego (RCHSD) in September, 2009.

The Department of Surgery of the medical foundation includes clinically active members of the hospital divisions of:

CARDIOVASCULAR SURGERY  
NEUROSURGERY  
OPHTHALMOLOGY  
OTOLARYNGOLOGY AND  
HEAD AND NECK SURGERY

MATERNAL AND FETAL MEDICINE  
PEDIATRIC GENERAL SURGERY  
ORTHOPEDICS  
UROLOGY

The medical practice foundation has provided a structure for the surgical faculty to work collaboratively to improve surgical clinical care, education, and enhance research activities. Members of the department are faculty in the Departments of Surgery, Orthopedics, Reproductive Medicine and Neurosciences at the University of California, San Diego (UC San Diego). The foundation has fostered even greater synergy between surgical colleagues at UC San Diego and RCHSD. This partnership has allowed the department to continue to provide world class surgical care for the region's patients and families.

RCHSD has embarked on the largest expansion in history. Our new Acute Care Pavilion opened on October 10, 2010. This added sixteen new state of the art operating suites, and new Hematology/Oncology, Neonatal Intensive Care and Surgical wings to the campus. RCHSD is now the largest children's hospital in California and one of the largest in the country treating over 16,000 inpatients per year. The recent acquisition of two adjacent buildings totaling more than 170,000 square feet has facilitated the development of the Child Health Research Institute. Through this facility, further growth will occur in patient-based research activities on the campus of RCHSD. This complements the spectacular basic science achievements of the faculty research at UC San Diego. Together, the Surgical Departments at UC San Diego, RCHSD, and the medical foundation are committed to building better care for tomorrow's children through research and be recognized nationally and internationally for the clinical and research expertise of its faculty.

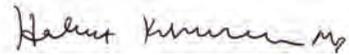
Sincerely,



**Donald B. Kearns, MD**  
Surgeon-In-Chief,  
Rady Children's Specialists  
of San Diego,  
A Medical Foundation



**Kathleen A. Sellick**  
President and CEO,  
Rady Children's Hospital-  
San Diego



**Herbert C. Kimmons, MD**  
Executive Director,  
Rady Children's Specialists  
of San Diego,  
A Medical Foundation



# THE HEART INSTITUTE

The Rady Children's Heart Institute-San Diego, an institute without walls, was created to integrate and coordinate the clinical, research and educational programs of the Cardiology and Cardiovascular Surgery Divisions at Rady Children's Hospital-San Diego (RCHSD).

## **CARDIOLOGY**

The Section of Cardiology currently includes 10 full time cardiologists. Clinical recruitments of the past year include: Dr. Printz (a specialist in MRI imaging and echocardiography) joined the Division in February 2009. Dr. Molkara (a graduating fellow from our institution and general cardiologist) joined the Division in August 2009. Dr. Perry (a specialist in electrophysiology and pacing) joined the Division in November 2009. A current active recruitment is underway for a specialist in heart failure and cardiac transplantation.



*Left to right: Vishal Nigam, Paul Grossfeld, Raymond Fripp, Stanley Kirkpatrick, Beth Printz, John Moore, Howaida El-Said, Christopher Davis, Delaram Molkara, Jeffrey Frazer, James Perry*

## FACULTY

**John W. Moore, MD, MPH**, Professor of Clinical Pediatrics; *Chief*, Section of Cardiology, Department of Pediatrics, Medical Director of Division of Cardiology, RCHSD; Medical Director, Cardiac Catheterization Laboratory, RCHSD

**Christopher K. Davis, MD, PhD**, Assistant Clinical Professor of Pediatrics; Medical Director of Exercise Laboratory, RCHSD

**Howaida G. EL-Said, MD, PhD**, Associate Professor of Pediatrics

**Jeffrey R. Frazer, MD**, Assistant Clinical Professor of Pediatrics

**Raymond R. Fripp, MD**, Associate Clinical Professor of Pediatrics; Medical Director of Echocardiography Laboratory, RCHSD

**Paul D. Grossfeld, MD**, Associate Adjunct Professor of Pediatrics; Director of Pediatric Cardiology

**Stanley E. Kirkpatrick, MD**, Associate Clinical Professor of Pediatrics

**Delaram Molkara, MD**, Assistant Clinical Professor of Pediatrics

**Vishal Nigam, MD**, Assistant Professor of Pediatrics in Residence

**James C. Perry, MD**, Clinical Professor of Pediatrics; Medical Director of Electrophysiology, Pacing and Adult Congenital Heart Disease, RCHSD

**Beth Printz, MD**, Associate Professor of Clinical Pediatrics; Medical Director of Non-Invasive Cardiac Imaging, RCHSD

## POSTDOCTORAL FELLOWS

**Sangeet Hedge, MD**, 1st year, UCSD

**Andras Bratincsak, MD**, 2nd year, UCSD

**Shai Tejman-Yarden, MD**, 2nd year, UCSD

**Rashmi Rao, MD**, 3rd year, UCSD

**Anas Salkini, MD**, 4th yr, interventional, UCSD

## CLINICAL ACTIVITIES

The Division is the only comprehensive tertiary care provider of cardiovascular services in the region (San Diego, Imperial, and South Orange Counties), and it receives referrals from Balboa Naval Medical Center as well as the San Diego Regional Kaiser Medical Center. In addition, the Division is the major off island referral center for the State of Hawaii. The Division's Clinical Volumes for the academic year 2008-2009 were 9049 outpatient visits including 798 patients seen in satellite offices. 543 cardiac catheterizations were performed, about 70% of which were interventional catheterizations; and there were 78 electrophysiological procedures. The echocardiography laboratory performed 8280 studies.

The growth of the division clinical volumes has been related both to expanding the referral practice within Southern California and neighboring states, as well as to meeting previously unmet demand for services within the traditional referral regions. The Division's Clinical Volumes place the program among the largest pediatric and congenital heart disease centers in the United States.

## RESEARCH ACTIVITIES

The Section's research program is anchored by Dr. Paul Grossfeld and his genetics laboratory. He has investigated the genetic basis of congenital heart defects and has become an international authority on Jacobsen's Syndrome. In addition, the Section faculty and fellows have been involved in a large number of clinical research projects. Dr. Vishal Nigam was recruited in the spring of 2009. His previous work has centered on the molecular mechanisms involved in aortic valve calcification. He is currently setting up his laboratory and his research protocols. His addition represents an important expansion to the Section's research program.

### Christopher Davis, MD, PhD

- Outcome of Patients with one-and-a-half ventricles: A comparative assessment of cardiac function, exercise tolerance, morbidity and mortality

### Howaida EL-Said, MD, PhD

- The hybrid procedure as an alternative to the Norwood Sano in high risk hypoplastic left heart (HLHS) patients
- Catheter balloon de-banding of the pulmonary artery: feasibility and safety (a hybrid technique)
- Closure of ventricular septal defects (VSD) with the Amplatzer Muscular VSD Occluder post approval study (VPA)
- Coarctation of the aorta stent trial (COAST)
- Transcatheter closure of atrial septal defect using the Amplatzer Septal Occluder with transthoracic echocardiography or transesophageal echocardiography
- Congenital cardiac catheterization outcomes project
- Amplatzer Duct Occluder II – post approval study
- A new echocardiographic parameter for management of coarctation of the aorta in the newborn: Transverse aortic arch to descending aorta ratio
- Cerebral microemboli in children undergoing cardiac catheterization

### Jeffrey R. Frazer, MD

- Clopidogrel to lower arterial thrombotic risk in neonates & infants trial (CLARINET)
- Comparison of the incidence of coronary artery abnormalities in febrile and non-febrile children

### Paul D. Grossfeld, MD

- Trial of beta-blocker therapy (Atenolol) vs. Angiotensin II receptor blocker therapy (Losartan) in individuals with Marfan Syndrome
- Delineation of candidate genes in 11q in cardiac development and their role in congenital heart disease through alteration of their expression using mouse knockout strategies (NIH KO8 Career Development Award, UCSD Academic Senate Grant)
- The role of NOTCH-1 in heart development and congenital heart disease
- Clinical studies related to identification of genes in cardiac development
- Identification of genes that cause mental retardation and behavioral problems in the 11q terminal deletion disorder (Jacobsen syndrome)
- Additional genotyping of patients with Jacobsen syndrome (UCSD Pediatrics Clinical Research Fund)

- The role of ETS01 in the neural crest in cardiac development and disease (Hope 4 Tiny Hearts)
- The role of ETS-1 in the neural crest in cardiac development and disease (Children's Heart Foundation)
- Screening of Olympic volleyball players for Marfan syndrome: A prospective study (National Marfan Foundation)

#### **Delaram Molkara, MD**

- Gene expression in Kawasaki disease. Sponsor: NIH

#### **John W. Moore, MD, MPH**

- Improving pediatric and adult congenital treatment (IMPACT) registry pilot study
- Review of use of covered stents to treat pulmonary vein stenosis in children and young adults
- Catheter balloon de-banding of the pulmonary artery: feasibility and safety (a hybrid technique)
- A new echocardiographic parameter for management of coarctation of the aorta in the newborn: transverse arch to descending aorta ratio
- ADO II clinical study
- Closure of muscular ventricular defects with the Amplatzer Muscular VSD Occluder post approval study (VPA)
- Coarctation of the aorta stent trial (COAST)
- Review of interventional stent procedures in children and young adults
- Review of interventional cardiac catheterization procedures in children and young adults
- The STARFlex Septal Occluder in atrial septal defect: long term status of patients following closure of ASD with the STARFlex Septal Occlusion System (SALSA)
- Closure of ventricular septal defects (VSD) with the Amplatzer Muscular VSD Occluder in high risk patients
- Congenital cardiac catheterization outcomes project (C3P0)
- Implantation of the Medtronic Melody Transcatheter Pulmonary Valve (TPV) in patients with dysfunctional Right Ventricular Outflow Tract (RVOT) conduits
- Percutaneous coronary interventional and coronary stent implantation in children
- Congenital Cardiovascular Interventional Study Consortium (CCISC)
- Medtronic melody transcatheter pulmonary valve (Medtronic, Inc.)

- Transcatheter closure of ASD using the Amplatzer Septal Occluder with transthoracic echocardiography or transesophageal echocardiography
- Covered cheatham-platinum stent for prevention or treatment of aortic wall injuries associated with aortic coarctation (COAST II)

#### **Vishal Nigam, MD**

- Modeling hemodynamic stresses in congenital heart disease
- Mechanisms of Notch1 in aortic valve calcification

#### **James Perry, MD**

- Development of the UCSD Adult Congenital Heart Program
- Assessment of optimal left ventricular myocardial and blood flow kinetics in patients with cardiac pacing systems: Development of a practical clinical technique to improve kinetic efficiency
- Transmural atrial leads in adult congenital heart patients: Lead performance in long-term follow-up

#### **Beth Printz, MD**

- Echocardiographic assessment of cardiac left ventricular strain, torsion and blood flow analysis in subjects with congenital and acquired heart disease

## **TEACHING ACTIVITIES**

The Division provides a comprehensive accredited educational program for fellowship training in pediatric cardiology. Dr. Grossfeld is the Fellowship Program Director, and the Program is supported by all of the faculty/staff. Fellows are offered clinical teaching and mentoring in all aspects of clinical cardiology: Outpatient care and evaluation, Inpatient and ICU care Echocardiography, CT and MRI, Diagnostic and Interventional Cardiac Catheterization, Electrophysiology and Pacing, Exercise Physiology and Clinical Research. A broad schedule of lectures and presentations are offered including: Weekly Surgery Conference, Weekly Catheterization Conference, Weekly Core Lecture, and Monthly Journal Club and Research Meeting. The 3-year program has full ACGME accreditation.

The Division offers a fourth year position for a Fellow in interventional congenital cardiology. This position includes training and experience as operator or first assistant in approximately 200 procedures, teaching conferences, and training in clinical transitional research.

Faculty/staff cardiologists are also active in training of pediatric residents and medical students. Rotation in pediatric cardiology is not mandatory for residents, but many selected this experience. The Division provided customized outpatient and inpatient experiences for pediatric residents and medical students.

## AWARDS, HONORS AND MAJOR PRESENTATIONS

### Christopher Davis, MD, PhD

Screening young athletes to prevent sudden death. Given at Pediatric Grand Rounds, RCHSD, San Diego, CA, August 20, 2010

Screening young athletes to prevent sudden death. Given at Pediatric Grand Rounds, Scripps Mercy Hospital, San Diego, CA, May 27, 2010

Unusual case presentation: Focal myocarditis. Given at the Advances in the Practice of Pediatrics, San Diego, CA, March 27, 2010

Poster Presentation, **Davis CK**, Pastuszko P, Lamberti J, **Moore J**, **El Said H**. The hybrid procedure for the borderline left heart. World Congress of Pediatric Cardiology and Cardiac Surgery, June 2009

Sudden cardiac death in children. Given at the 2009 Advanced Cardiac Topics, RCHSD, San Diego, CA, June 8, 2009

The cardiologist's role in the evaluation of syncope. Given at the Advances in the Practice of Pediatrics, sponsored by RCHSD, San Diego, CA, February 15, 2009

Prevention of infective endocarditis: the new guidelines. Given at RCHSD Dental Conference, San Diego, CA, January 27, 2009

### Howaida El-Said, MD, PhD

Prabakaran S, Hegde S, **El-Said H**, **Moore J**. Randomized trial of transthoracic echocardiography versus trans-

esophageal echocardiography for definitive assesment and guidance of transcatheter closure of ASDs in children using the Ampaltzer Septal Occluder. Accepted for presentation, PICS July 2011

Hegde S, **Moore J**, **El-Said H**. Hybrid. A risk stratified algorithm for eclectic use of hybrid palliation in high risk neonates. Accepted for presentation, PICS July 2011

Bratincsak A, **Moore J**, **El-Said H**. Use of TPA for femoral artery obstruction post catheterization. Accepted for presentation, PICS July 2011

**El-Said H**, Hegde S, **Moore J**. First report of atretic coronary sinus stenting resulting in dramatic improvement of ventricular function in functional single ventricle. Accepted for presentation, PICS July 2011

Invited Speaker, The abnormal fetal echocardiogram and post natal intervention. Genetic ultrasound, basic sonography and hands-on patient scanning. Schaezel Center, San Diego, CA, March 2011

Invited Speaker, Transcatheter pulmonary valve implantation. Egyptian working group for pediatric cardiologists, the 3rd International Meeting, Cairo, December 2010

Invited Speaker, PFO closure: What is the latest? Egyptian working group of interventional cardiology, the 15th Annual Scientific Meeting, Cairo, December 2010

Presentation, **El-Said H**, Desoki M, Moafy A. Unusual presentation of a huge right coronary artery fistula; technical issues with device closure. PICS/AICS Meeting, Chicago, IL, July 20 2010

Presentation, **El-Said H**, Murphy J, Bergersen L, Foerster S, Torres A, Vincent J, **Moore J**. Adverse events associated with PDA closure: A prospective multicenter experience (C3PO). PICS/AICS Meeting, Chicago, IL, July 20 2010

Presentation, Salkini A, **El-Said H**. Bilateral multiple pulmonary arteriovenous malformations associated with a coronary artery fistula. A case report in a 5-year-old girl. PICS/AICS Meeting, Chicago, IL, July 20, 2010

Presentation, **El-Said H**, **Moore J**. ASD device closure in a 2.7kg infant; feasibility and technical issues. PICS/AICS Meeting, Chicago, IL, July 2010

Presentation, **El-Said H**, Gordon B, Bratincsak A, **Moore J**. Closure of perimembranous ventricular septal defects with aneurismal tissue using the Amplatzer duct occlude. Lessons learned and medium term follow up. SCAI, May 2010

Presentation, Tejman-Yarden S, **Molkara D, El-Said H, Moore J**. Echo guided pericardiocentesis of non-circumferential effusions using non-standard catheter entry sites. SCAI, May 2010

Presentation, Bratincsak A, **El-Said H, Moore J**. Percutaneous stent placement in the left main coronary artery in infancy. SCAI, May 2010

Invited speaker, Starting a hybrid program. Evolving Concepts in the Management of Congenital Heart Disease Conference, January 2010

Roa RP, Connolly D, Lamberti J, Fripp R, **El Said H**. The hybrid procedure in HLHS Challenges in Cardiology, Cairo, April 2009; A new echocardiographic parameter for management of coarctation of the aorta in the newborn: Transverse aortic arch to descending aorta ratio. American Society of Echocardiography, June 2009

Davis C, Moore J, **EL-Said H**. Criteria for biventricular repair in the era of hybrid. The World Congress of Pediatric Cardiology, Australia 2009

Pastuszko P, **El-Said H, Moore J, Lamberti J**. Main pulmonary artery dilatation after the hybrid procedure exceeds neo-aortic dilatation after the Norwood/Sano procedure: Is this a cause for concern? The World Congress of Pediatric Cardiology, Australia 2009

**EL-Said H, Moore J, Pastuszko P, Lamberti J**. Serial Troponin as an early indicator for need to re-intervene after the hybrid procedure. The World Congress of Pediatric Cardiology, Australia 2009

**El-Said H, Hamzeh RK, Lamberti J, Moore J**. Catheter balloon de-banding of the pulmonary artery: Feasibility and safety (a hybrid technique). The World Congress of Pediatric Cardiology, Australia 2009

### **Jeffrey R. Frazer, MD**

**Molkara D, Frazer JR**, Lin KO, Shimizu C, Jain S, Sun S, Baker AL, Newburger JW, Davila S, Hibberd ML, Burns JC. Transforming growth factor-beta pathway polymorphisms and aortic root dilatation in Kawasaki disease patients. Monthly lecture on echocardiography topic at Echocardiography Conference, submitted ACC, March, 2009

### **Paul D. Grossfeld, MD**

Oral presentation, New basic and genetic insights into HLHS. American Heart Association. Scientific Sessions; Moderator: Dr. Frank Hanley, Orlando, FL, November 2011

The Marfan syndrome trial: Losartan vs. Atenolol for aortic root dilation (an update). Pediatric Grand Rounds, Children's Hospital of Orange County, Anaheim, CA, March 2011

The genetic basis of congenital heart disease: Clinical implications. Children's Hospital of Orange County Residents' Conference, Anaheim, CA, March 2011

The role of ETS-1 in causing heart defects in Jacobsen syndrome. 7th biannual 11q Research and Resource Conference, San Diego, CA, July 2010

Oral presentation, Atenolol vs. Losartan for aortic root dilation in patients with Marfan syndrome. Western Society of Pediatric Cardiology, Phoenix, AZ, April 2010

The genetic basis of heart and brain defects in Jacobsen syndrome: Implications for the general population. UCSD Department of Pediatrics Grand Rounds, San Diego, CA, April 2010

The genetic basis of congenital heart and brain defects in Jacobsen syndrome: Implications for the general population. UCLA Pediatric Grand Rounds, Los Angeles, CA, January 2010

Identification of genes for heart and brain defects in Jacobsen syndrome. UCSD Department of Pediatrics Faculty Research Series, San Diego, CA, November 2009

Oral presentation, Finding the heart gene for Jacobsen syndrome: A ten-year odyssey. Sixth European 11q Research and Resource Group Meeting, Pforzheim, Germany, 2009

Oral presentation, Deletion of ETS-1 in the cardiac critical region causes a subset of the congenital heart defects in Jacobsen syndrome. Weinstein Meeting on Cardiovascular Development, San Francisco, CA, May 2009

Oral presentation, Deletion of ETS-1 in the cardiac critical region causes a subset of the congenital heart defects in Jacobsen syndrome. Keystone Symposium on Cardiac Development and Regeneration, Asheville, NC, March 2009

**John W. Moore, MD, MPH**

- Invited Speaker, Device closure of VSD, hybrid procedure for treatment of hypoplastic left heart, stent technology in congenital heart disease, Scottsdale, AZ, February 2011
- Mullins Lecturer, Past present and future of stents in congenital heart disease. SCAI, San Diego, CA, 2010
- Invited Speaker, Difficult vascular access and retrieval of implanted or embolized devices. PICS-AICS, Chicago, IL, July 2010
- Invited Speaker, Retrieval of embolized foreign bodies. PICS-AICS 09 at 5th World Congress of Pediatric Cardiology And Cardiac Surgery, Cairns, Australia, June 23, 2009
- Invited Speaker, VSD devices – Is the cat out of the bag? Western Society of Pediatric Cardiology, Yosemite, CA, May 1, 2009
- Chair and Moderator, ACC Intervention in Hypoplastic Left Heart Syndrome Session, Orlando, FL, March 31, 2009
- Chair and Organizer, ACC Spotlight Committee for Pediatric and Congenital Live Case Sessions, Orlando, FL, March 31, 2009

**Delaram Molkara, MD**

- Tejman Yarden S, **Molkara D, El-Said H, Moore J**. Echo guided pericardiocentesis of loculated pericardial effusions using non-standard approaches. Presented at the SCAI 33rd Annual Scientific Session, May 2010

**Vishal Nigam, MD**

- Nigam V**, Jensen B, Simpson P, Srivastava D. Translational regulation of Bmp2 and Bmp4 by Let-7 during calcification of aortic valve cells. Weinstein Cardiovascular Development Conference, San Francisco, CA, 2009
- Nigam V**, Jensen B, Simpson P, Srivastava D. Transcriptional and translational regulation of Bmp2 by Notch1 and Let-7 during aortic valve calcification. Pediatric Academic Societies' Annual Meeting, Baltimore, MD, 2009
- Kwon C, Qian L, Cheng P, **Nigam V**, Arnold J, Srivastava D. A regulatory pathway involving Notch1/beta-Catenin/Isl1 determines cardiac progenitor cell fate. Weinstein Cardiovascular Development Conference, San Francisco, CA, 2009

**James Perry, MD**

- Arrhythmias in congenital heart disease. 6th Annual CHD Symposium, Berlin, January 2009
- Sudden cardiac death in adult congenital heart disease. Adult Congenital Heart Association Symposium, Boston, April 2009
- Arrhythmia, heart failure and sudden death in adult congenital heart patients. San Diego Electrophysiology Society, Sharp Medical Center Grand Rounds, San Diego, CA, March 2010
- Practical pediatric cardiology for the office. Temecula Valley Symposium, Temecula, CA, April 2010
- Arrhythmias in adult congenital heart patients should (not) be managed by an adult electrophysiologist. Heart Rhythm Society Scientific Session, Denver, CO, May 2010
- Multiple topics on electrophysiology. Pediatric Cardiology Board Review, Laguna, CA, September 2010
- Sudden cardiac death in adult congenital heart disease. Medtronic/San Diego Fellows Lecture, San Diego, CA, November 2010
- Postoperative atrial arrhythmias in adult congenital heart disease. Pediatric Cardiac Intensive Care Society, Miami, FL, December 2010
- Sudden cardiac death and malignant arrhythmias: The scope of the problem in adult congenital heart disease. Sudden Cardiac Arrest Symposium, Anaheim, CA, January 2011
- Malignant arrhythmias in adult congenital heart disease. Western Society of Pediatric Cardiology, Rancho Palos Verdes, CA, March 2011
- Recognition of IART and atypical flutter in adult congenital heart disease. Adult Congenital Heart Association National Symposium, Los Angeles, CA, March 2011

**PUBLICATIONS**

- Bashore T, Balter S, Barac A, Byrne J, Cavendish J, Chambers C, Laskey W, Miller J, Moliterno D, **Moore J**, Oliver-McNeil S, Popma J, Tommaso C, (Writing Committee). American College of Cardiology Foundation/Society for Cardiovascular Angiography

- and Interventions Clinical Expert Consensus Document on Cardiac Catheterization Laboratory Standards Update 2011. *J Am College Cardiol/Catheter Cardiovasc Interv*, 2011 (in press).
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- Bratincsak A, **El-Said H**, Bradley J, Shayan K, **Grossfeld P\***, Cannavino C\* (\*Co- senior authors). Fulminant myocarditis associated with pandemic H1N1 influenza A virus in children. *J Am Coll Cardiol*, 55(9):928-9, 2010.
- Bratincsak A, **El-Said H**. Unusual variant of a rare constellation: a left sided scimitar syndrome with connection to the azygos vein. *Congenital Heart Disease*, August 2009.
- Bratincsak A, Salkini A, **El-Said H**, **Moore J**. Percutaneous stent implantation into coronary arteries in infants. *Catheter Cardiovasc Interv*, 2011 (in press).
- Shimizu C, Jain S, Lin K, **Molkara D**, **Frazer J**, Sun S, Baker A, Newburger J, Rowley A, Shulman S, Davila S, Hibberd M, Burgner D, Breunis W, Kuijpers T, Wright V, Levin M, Eleftherohorinou H, Coin L, Popper S, Relman D, Fury W, Lin C, Mellis S, Tremoulet A, Burns J. Transforming growth factor-beta signaling pathway in patients with Kawasaki disease. *Circulation Genetics*, 2010 December, 100.940858.
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- Cross K, **Perry J**. Are emergency physicians ready for adults with congenital heart disease? *US Cardiol* (in press).
- Davis C**, Pastuszko P, Lamberti J, **Moore J**, Hanley F, **El Said H**. The hybrid procedure for the borderline left ventricle. *Cardiology in the Young*, 21(1):26-30, 2011.
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- Dilawar M, **El-Said H**. Balloon dilation in coarctation in the newborn. *Pediatr Cardiol* (in press).
- Dilawar M, **El-Said H**, El-Sisi A, Ahmad Z. Safety and efficacy of low-profile balloons in native coarctation and recoarctation balloon angioplasty for infants. *Ped Cardiol*, 30(4):404-8, 2009.
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- El-Said H**, Hamzeh R, Lamberti J, **Moore J**. Catheter balloon adjustment of the pulmonary artery band: Feasibility and safety. *Pediatr Cardiol*, 32:8-13, 2011.
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# THE HEART INSTITUTE

## **CARDIOTHORACIC SURGERY**

The Pediatric Cardiac Surgery Division of the Division of Cardiothoracic Surgery at the University of California, San Diego (UCSD) School of Medicine is based at Rady Children's Hospital-San Diego (RCHSD). The Division, in conjunction with the Division of Pediatric Cardiology, provides cardiovascular surgery services for infants, children and adults with congenital and acquired heart disease. The Division serves the San Diego metropolitan area (population: 3.2 million) and it is a major referral center for Imperial and Orange Counties, Hawaii, New Mexico, Mexico, and the Pacific Rim Islands. Dr. John J. Lamberti is the Joyce and Eugene Klein Director of the Heart Institute at RCHSD. Dr. Lamberti also assumed the role of Division Chief of Cardiovascular Surgery when Dr. Jolene Kriett, the former Director of Cardiac Transplantation at RCHSD, retired on September 1, 2010. Dr. Peter Pastuszko, Associate Clinical Professor of Surgery at UCSD, is the Medical Director of Pediatric Cardiac Surgery Critical Care at RCHSD.

The Division's clinical volume for the academic year 2009-2011 remained steady when compared to previous academic years. The complexity of the caseload has increased due to increasing referrals from outlying areas in Southern California and the State of Hawaii. RCHSD is a "high volume" pediatric cardiac surgical program according to the Society of Thoracic Surgeons (STS) Congenital Heart Surgery Database. The Division's outcomes are comparable with other leading high volume centers. The STS analysis is based upon risk-adjusted data. The complexity score for RCHSD is slightly higher than the national average reflecting our role as a major referral center.



*Left to right: Peter Pastuszko,  
John J. Lamberti*

## CLINICAL ACTIVITIES INPATIENT/OUTPATIENT

The Division of Cardiothoracic Surgery receives referrals from San Diego, Orange and Imperial counties; the Naval Medical Center, San Diego; the San Diego Regional Kaiser Medical Center; Tripler Army Medical Center, Honolulu, Hawaii; Kapiolani Medical Center for Women and Children, Honolulu, Hawaii; Straub Clinic, Honolulu, Hawaii and the Kaiser Permanente Medical Group, Honolulu, Hawaii. The Division's clinical volume for the academic years 2009-2011 included approximately 265 open-heart, 110 closed-heart and 150 miscellaneous cardiovascular surgical procedures. The faculty provides consultative services at UCSD Medical Center, RCHSD, and at all referral sites in Hawaii. In addition, faculty members provide support for adult patients with congenital heart disease undergoing treatment at all of the adult hospitals in San Diego County.

Dr. John Lamberti and Dr. John Moore organized and coordinated a three day symposium in January 2010. The symposium was entitled Evolving Concepts in the Management of Complex Congenital Heart Disease II. The symposium represented the second in a series of biennial meetings designed to address the management of the most complex forms of congenital heart disease. The faculty consisted of multiple experts in surgery and cardiology drawn from the finest programs in North America.

## FACULTY

**Jolene M. Kriett, MD**, Professor of Surgery (retired September 2010)

**John J. Lamberti, MD**, Professor of Surgery

**Peter Pastuszko, MD**, Associate Clinical Professor of Surgery

**Kelly R. Scholl, PA**

## POSTDOCTORAL FELLOWS

**Siobhan Horan** 2009-2011

**Michael Sleet** 2010-2011

## RESEARCH ACTIVITIES

The Division participates in multiple longitudinal studies of congenital heart disease sponsored by the Congenital Heart Surgeon's Society. Dr. John J. Lamberti is the principal investigator on multiple protocols involving complex congenital heart defects. The studies are designed to evaluate the natural history, including before and after surgical therapy, of relatively rare congenital heart defects in a multi-center collaborative effort.

## RESEARCH SUPPORT

Grant/Contract #	Total Direct Dollars/Duration of Grant
<b>Paul David Grossfeld, MD</b>	
Identification of Genes for Cognition in Distal 11q: Further Genotyping 2009-PEDGENO	\$75,000 June 2009-Dec. 2009
Marfan Trial New England Research Institute	\$45,051 June 2009-May 2010
<b>John Moore, MD</b>	
STARFlex in Atrial Septal Defect- Long term Status Assessment of Patients Following Closure of ASD with the STARFlex Septal Occlusion System in IDE study G-960098 (SALSA)/NMT Medical, Inc.	\$2,900 Aug. 2007-Indefinite
Coarctation of the Aorta Trail (COAST) Johns Hopkins University	\$198,865 Sept. 2007-Indefinite
Closure of Muscular Ventricular Septal Defects with the Amplatzer Muscular VSD Occluder-Post Approval Study (Muscular VPA) AGA Medical Corporation	\$26,600 Sept. 2008-Indefinite
ADO II Clinical Study AGA Medical Corporation	\$432,567 Dec. 2008-Indefinite
<b>Vishal Nigam, MD</b>	
Mechanisms of Notch1 in Aortic Valve Calcification Nih/Nhlbi/7 K08h1086775-03	\$85,000 Oct. 2009-Apr. 2010
<b>Peter Pastuszko, MD</b>	
Health Sciences Academic Senate Research Grant	\$10,000 Jan. 2011-Jan. 2012

Optimal Management of Critical Left Ventricular Outflow Tract Obstruction: A Congenital Heart Surgeons' Society Study; IRB# 091156–Approved Sept '09; Sponsor: Hospital for Sick Children, Toronto, Ontario, Canada; **John J. Lamberti, MD, P.I., Peter Pastuszko, MD, Sub-I**

Congenital Heart Surgeons' Society (CHSS) Studies of Congenital Heart Disease; IRB# 091162–Approved Sept '09; Sponsor: Hospital for Sick Children, Toronto, Ontario, Canada; **John J. Lamberti, MD, P.I. Peter Pastuszko, MD, Sub-I**

Humanitarian Use of the Contegra Pulmonary Valved Conduit (HDE# H020003); IRB# 090357–Approved Apr '09; Sponsor: Medtronic, Inc.; **John J. Lamberti, MD, P.I., Jolene Kriett, MD, Sub-I, Peter Pastuszko, MD, Sub-I**

SGAV HDE Protocol-CryoValve SG Aortic Human Heart Valve Combination Retrospective/Prospective Multi-Center, Cohort Study; IRB# 100648–Approved May '10; CTAS20103993, RCHSD PROJ#12420, CC 221-00957999; **John J. Lamberti, MD, P.I.**

Use of the Melody Transcatheter Pulmonary Valve as a Humanitarian Use Device under a Humanitarian Device Exemption; IRB#100445–Approved Mar '10; RCHSD PROJ#12391, EPIC/SP#127; Sponsor: Medtronic, Inc.; **John W. Moore, MD, P.I., John Lamberti, MD**, Co-investigator

Dr. Peter Pastuszko is the primary cardiac surgeon involved in a series of research projects at the University of Pennsylvania in Philadelphia, PA. Dr. Pastuszko travels to Philadelphia five times a year for an intense schedule of experiments designed to evaluate the effects of cardiopulmonary bypass on brain structure and function in a neonatal piglet model.

## TEACHING ACTIVITIES

Drs. Lamberti and Pastuszko participate in the following teaching activities:

- Daily morning and afternoon rounds at RCHSD with cardiac surgery fellows, cardiology fellows, ICU fellows, nurses, nurse practitioners, nurses in training, medical students, pediatric residents and cardiology attendings.
- Biweekly teachings rounds with the PICU team and monthly teaching conferences with the NICU team.
- Conferences at RCHSD and UCSD Medical Centers including the transplantation conference, adult cardiology/cardiothoracic surgery conference, pediatric cardiology/cardiothoracic surgery conference and cardiothoracic surgery resident teaching conference.
- Cardiothoracic surgery outpatient and the Transplant clinics at UCSD and RCHSD.
- Medical student rotations in CT surgery and Clinical Anatomy. Dr. Lamberti is the mentor, consultant and advisor to the congenital heart surgery program at Kapiolani Medical Center for Women and Children (KMCWC) in Honolulu, Hawaii. KMCWC is the primary pediatric teaching hospital of the John A. Burns School of Medicine Department of Pediatrics at The University of Hawaii/Manoa. Since 1994, Dr. Lamberti has spent five weeks each year at KMCWC assisting in surgery, participating in pre and postoperative care and overseeing quality assurance aspects of the cardiac surgery

program. Dr. Lamberti makes teaching rounds every morning during Hawaii Heart Week. He also chairs the peer review committee meeting at KMCWC, and participates in the case review conferences.

- In January 2011, Dr. Peter Pastuszko led a surgical team on a humanitarian teaching mission to the Heart and General Hospital in Jaipur, India.

## AWARDS, HONORS AND MAJOR PRESENTATIONS

### John J. Lamberti, MD

Best Doctors in America 2005-2011

Castle Connolly, America's Top Doctors 2009-2011

The Pat Whinnery Expense Reduction Award, RCHSD (2010-2011)

Invited lecturer, The evolution of congenital heart surgery:

The role of technology in advancing state of the art care. Biomechanics Seminar, UCSD Department of Mechanical and Aerospace Engineering, San Diego, CA, January 2009

Lecture and Guided Tour for Rady Children's Hospital Trustees, Heart Surgery at RCHSD: Past, Present and Future, March 31, 2009

Invited lecturer, Progressive dilatation of the aortic root in cono-truncal abnormalities. Western Society of Pediatric Cardiology, Yosemite, CA, May 2009

Invited lecturer, Reoperation to repair the A-V valve after prior repair of an atrio-ventricular canal defect. The 5th World Congress of Pediatric Cardiology and Cardiac Surgery, Cairns, Australia, June 2009

Invited presentation, Heart surgery at the Rady Children's Hospital in 2009. Children's 101 Mini-Internship Program in RCHSD MOB 113, September 30, 2009

Invited lecturer, Surgical care for infants and children with congenital heart disease. Pediatric Grand Rounds at Kapiolani Medical Center for Women and Children, Honolulu, HI, November 2009

Invited lecturer, Mitral valve repair or replacement following atrioventricular canal repair. 46th Annual Meeting of the Society of Thoracic Surgeons, Ft. Lauderdale, FL, January 25-27, 2010

## Major Goals and Plans

RCHSD and UCSD Cardiology and Cardiovascular Surgery programs are committed to fulfilling our mission to provide optimal care for infants, children and adults born with Congenital Heart Defects and to advance our knowledge and understanding of Congenital Heart Disease. To implement our strategic plan for Cardiac Services we have:

1. Funded and are in the process of physician recruitment in Transplantation, Cardiac Critical Care, and in the basic sciences regarding congenital and acquired heart disease in infants, children and young adults.
2. Begun facility construction for a pediatric Cardiac MRI Scanner, two new Hybrid Cardiac Catheterization Laboratories, two new cardiac operating rooms, a dedicated Cardiac Critical Care Unit, and an expanded Heart Center.
3. Administrative and Board of Directors approval to establish an in-house pediatric heart transplant program and are preparing our UNOS application.

Invited lecturer, The clinical relevance of CFD modeling: One surgeon's perspective. First International Symposium on Computational Simulation in Congenital Heart Disease, sponsored by UCSD/Stanford University/RCHSD and LPCH, La Jolla, CA, February 26-27, 2010

Guest speaker, Cardiac transplantation at Rady Children's Hospital. Loving Little Hearts Fundraiser at the home of Jules and Michelle Arthur, March 20, 2010

Invited presentation, Heart surgery at the Rady Children's Hospital in 2010. Children's 101 Mini-Internship Program in MOB 113, April 15, 2010

Invited lecturer/Moderator, Introduction of Dr. Aldo Castaneda. Joint meeting of CHSS, ECHSA, Castaneda Society, and the Latin American Pediatric and Congenital Heart Surgery Societies. Antigua, Guatemala, July 15-17, 2010

Invited lecturer, Care the Heart: Cure the Heart. Sponsored by Kapiolani Medical Center for Women and Children and the University of Hawaii, Sixth Collaborative Neonatal and Pediatric Nurses Conference, Honolulu, HI, September 3, 2010

Invited lecturer, Pediatric critical care nursing, Stage I palliation. Contemporary Forums National Nursing Conference, La Jolla, CA, October 26-30, 2010

Invited speaker, Bonita RCHSD Auxiliary Annual Luncheon by the Bay Meeting, December 4, 2010

Invited lecturer, How randomized clinical trials impact pediatric cardiac surgical decision making. Pediatric Cardiac Intensive Care Society Biennial Meeting, Miami Beach, FL, December 8-11, 2010

Invited lecturer and moderator, Invited Lectures (3): What I have learned about the Fontan operation in 40 years; Late reoperations after the arterial switch; Détente: Why I like the Hybrid procedure. Pediatric Cardiology 2011, The Children's Hospital of Philadelphia Annual Meeting in Scottsdale, AZ, February 2-6, 2011

Invited presentation, Heart surgery at the Rady Children's Hospital in 2011. Children's 101 Mini-Internship Program in RCHSD MOB 113, March 30, 2011

Invited lecturer, Current concepts of surgical repair of tetralogy of fallot. Annual Meeting of the Congenital Cardiac Anesthesia Society, San Diego, CA, March 31, 2011

### Peter Pastuszko, MD

Invited lecturer, A quantitative study of simulated bicuspid aortic valves. 63rd Annual Meeting of the APS Division of Fluid Dynamics, Long Beach, CA, November 21-23, 2010

Invited lecturer, Tetralogy of Fallot. Advanced Cardiac Topics, RCHSD, San Diego, CA, July 7, 2010

Invited lecturer, Congenital heart surgery: Past progress, current trends and future directions. Grand Rounds, Department of Surgery, UCSD, San Diego, CA, June 16, 2010

Invited lecturer, Congenital heart surgery: Past, present, future. Pediatric Cardiac Surgery Program presented by the Heart and General Hospital, Jaipur, India, January 31, 2010

Invited lecturer, Surgical strategies to maximize neurological outcomes after cardiac surgery. Evolving Concepts in the Management of Complex Congenital Heart Disease II, San Diego, CA, January 14-16, 2010

Invited lecturer, Hybrid HLHS patients have excessive neo-aortic root dilatation. Annual Meeting of the Congenital Heart Surgeons Society, Chicago, IL, November 1-2, 2009

Invited lecturer, The effect of granulocyte colony-stimulating factor on expression of selected regulatory proteins responsible for cell injury or survival in the brain of newborn piglets following cardiopulmonary bypass and circulatory arrest. The 5th World Congress of Pediatric Cardiology and Cardiac Surgery, Cairns, Australia, June 21-26, 2009

## PUBLICATIONS

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operative renal insufficiency following repair of congenital heart disease. *World Journal for Pediatric and Congenital Heart Surgery*, accepted for publication May 3, 2011

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# MATERNAL-FETAL MEDICINE

Physicians of the Maternal-Fetal Medicine Division of Rady Children's Specialists of San Diego (RCSSD) have been providing prenatal diagnosis, ultrasound imaging, consultation, and pregnancy care to families and physicians in San Diego, Imperial, and Riverside Counties since 1990.

For the past two years, the division has focused on:

1. Expanding clinical activities;
2. Recruiting; and
3. Increasing our CME activities.



*Left to right: Larry Cousins, Sean Daneshmand, Holly Casele, Wade Schwendemann, Val Catanzarite*

## FACULTY

**Val Catanzarite, MD, PhD, *Division Chief***  
**Joanna Adamczak, MD**  
**Holly Casele, MD**  
**Larry Cousins, MD**  
**Sean Daneshmand, MD**  
**Wade Schwendemann, MD**  
**Neha Trivedi, MD**

## CLINICAL ACTIVITIES

Our inpatient service is at Sharp Mary Birch Hospital for Women, and the outpatient offices are in the Frost Street complex adjacent to the Sharp/Rady Children's Campus, as well as in Encinitas, Murrieta, San Ysidro, and Grossmont Hospital. The growth of the practice is reflected in the statistics of 2010. The group's ultrasound volume increased by over 30% from 2009, to a total of over 12000 ultrasound examinations, including >2000 nuchal translucency screens, >5000 comprehensive maternal-fetal sonograms, and >700 fetal echocardiograms. In the outpatient arena, the group provided over 800 consultative evaluations. The group continues to limit our delivery volume to 700 (vaginal and cesarean) births per year.

The San Diego region is increasingly multinational. On a single day in 2011, we saw patients from all continents except Antarctica and a total of 23 countries! Our Division now has physicians or staff who speak Spanish, Gujarati, Hindi, Korean, Japanese, Eritrean, German, Polish and Farsi, as well as limited Russian.

## RECRUITING

The Division of Maternal Fetal Medicine welcomed two outstanding new physicians in September of 2011, Drs. Joanna Adamczak and Neha Trivedi.

## CME

The Division sponsored major continuing medical education events in Murietta and in Chula Vista during 2010. Our ultrasound course in February of 2011 attracted 150 participants, and an Update in Maternal Fetal Medicine CME course is scheduled for October, 2011.

**Joanna Adamczak, MD**, received her undergraduate training at the University of California, Santa Barbara, followed by medical school at St. Georges University and Obstetrics and Gynecology Residency at St. Barnabus

## Major Goals and Plans

**Clinical Activities.** With the addition of two new physicians, we have expanded availability at our Frost Street and satellite offices. We are adding fetal echocardiography to services provided at the Encinitas, Grossmont, and Murietta facilities, and will bring our Grossmont facility up to full Prenatal Diagnostic Center status.

**Research.** We anticipate wrapping up ongoing projects (outlined above), and two members of the Division (Catanzarite and Cousins) will be dedicating 0.15 FTE to research activities starting October, 2011.

**Education:** In 2011, we became a training site for RDMS interns (our first graduate has taken a position with the Division). We plan to expand this activity, and also offer training to Maternal Fetal Medicine fellows in advanced sonography and fetal echocardiography. Our major CME events for 2012 will be a Spring ultrasound course and a Fall Maternal Fetal Medicine update. We are exploring the possibility of internet based collaborative CME with colleagues in MFM in eastern Europe.

**Website.** In the first half of 2011, we completely revised and updated our division's website (<http://sandiegoperinatal.com>). We are producing an extensive library of patient and provider information regarding obstetric and prenatal diagnostic issues. We plan to add our CME presentations to the website.

Medical Center in Livingston, New Jersey. Her fellowship training was at Robert Wood Johnson Medical Center and the University of Pennsylvania. Academic honors include Dean's Honor Roll in medical school, and election as a resident representative to the Committee on Resident Education in Obstetrics in Gynecology/Association of Professors of Gynecology and Obstetrics (CREOG/APGO). She has been active in the Crudem Foundation for Haiti Medical /Surgical Relief. During her fellowship, Dr. Adamczak achieved certification in Fundamental Critical Care by the Society of Critical Care Medicine.

Clinical interests include prenatal care for women with complex medical complications including maternal cardiac disease, organ transplants and cancer, and Dr. Adamczak also has a strong interest in prenatal diagnosis. She is the fourth member of our division to provide CVS. Dr. Adamczak is fluent in Polish and speaks Spanish as well.

**Neha Trivedi, MD**, received her undergraduate training at the University of California, Los Angeles (UCLA), and medical education at the University of Pittsburgh School of Medicine, then completed both Obstetrics and Gynecology Residency and Maternal Fetal Medicine Fellowship training at the University of California, San

Diego (UCSD). Academic honors include Magna Cum Laude and Neurosciences Departmental Honors while at UCLA, Alpha-Omega-Alpha honors, the University of Pittsburg Humanism award in 2004, and an HIV/AIDS Education Leadership Award while in medical school. Dr. Trivedi also received the Berlex Resident Teaching Award during residency.

Dr. Trivedi has basic science interests in microRNAs in early mammalian development. Her clinical interests include diabetes in pregnancy, biochemical markers in prediction of pregnancy outcomes, trauma in pregnancy, and prenatal diagnosis.

Dr. Trivedi speaks Spanish, conversational Gujarati, and Hindi.

**Holly Casele, MD** received her undergraduate degree magna cum laude from Brown University, followed by medical school and residency at Northwestern University, where she was elected into the Alpha Omega Alpha Honor Medical society. She then completed a fellowship at the University of Pittsburgh, Magee-Women's Hospital. She was an Assistant Professor at Northwestern University Medical School and a senior attending at the Evanston Hospital in Evanston, Illinois from 1997-2005, before

joining our group. She has been elected as one of America's Best Doctors every year from 2007 to 2010.

Dr. Casele's clinical interests include thrombophilias and thromboembolic disorders in pregnancy, a topic upon which she has written and lectured widely; recurrent pregnancy loss, and noninvasive screening for fetal aneuploidy. Dr. Casele is certified for chorionic villus sampling.

Dr. Casele is currently a co-principal investigator for a study assessing the accuracy of a noninvasive screening tool for Down syndrome and other aneuploidy detections. She was instrumental in bringing our ultrasound image storage/reporting system online, and has been involved in the implementation of our Epic electronic medical record system as well.

**Larry Cousins, MD** was a founding member of the Maternal-Fetal Medicine Division. His undergraduate education was at UCLA, followed by medical school and residency at Creighton University, and fellowship at the Harbor/UCLA Program. Subsequently, Dr. Cousins taught at UCSD and Loma Linda University, before joining our group in 1990.

Clinical interests include medical complications of pregnancy, particularly diabetes, and preterm birth prevention. He has been very active at Sharp Mary Birch Hospital for Women, where is currently a member of the ObGyn supervisory committee. He has served as Director of Maternal-Fetal Medicine, Co-Chair of the Women and Infants Research Forum since 1991, Co-Chair of the Perinatal Morbidity and Mortality Committee since 2004, and Chief of Staff at Sharp Mary Birch in 2008-2009. Dr. Cousins was honored with the Sharp HealthCare Core Award for Quality Pillar for his work with the Cerner Design Team in 2009, and received a commendation from Sharp Mary Birch for Perinatal Special Care Unit Teaching in 2009 as well.

**Sean Daneshmand, MD** received his undergraduate degree from the UCSD, completed medical school at New York Medical College in Valhalla, New York, residency at UCLA, and fellowship at UCSD, before joining the Maternal-Fetal Medicine Division in 2002.

Dr. Daneshmand has basic science interests in the underlying triggers for preterm labor, preterm rupture of the membranes, and preeclampsia. Major clinical interests

include surgical complications of pregnancy and in particular management of invasive placentation.

Dr. Daneshmand has also been very active in fundraising for families with premature babies through Miracle Babies, a nonprofit organization which he founded in 2008. Miracle Babies' activities in 2010 included numerous charity events and a run/walk in 2010 that attracted >1500 participants. Under Dr. Daneshmand's guidance, the Miracle Babies foundation recently received a substantial grant award for study of obesity in pregnancy.

Dr. Daneshmand speaks Farsi, and conversational Spanish.

**Wade Schwendemann, MD** joined the Maternal-Fetal Medicine division in 2009. Dr. Schwendemann was a cum laude graduate of Albion College in Michigan, then completed medical school at the Medical College of Ohio in Toledo, Ohio, residency at the University of Kentucky, and fellowship at the Mayo Clinic in Rochester, Minnesota. Dr. Schwendemann has particular interests in simulation tools for teaching in maternal-fetal medicine, and in the clinical arenas of prenatal diagnosis and management of multiple gestations. Dr. Schwendemann provides chorionic villus sampling services for early prenatal diagnosis.

Dr. Schwendemann was involved with development of the residency curriculum while at Mayo Clinic, including modules for preeclampsia/eclampsia/HELLP syndrome, and teaching of amniocentesis. He is currently working with the San Diego Blood Bank to augment blood banking services in San Diego, with particular interest in the potential for public cord blood banking.

**Val Catanzarite, MD, PhD** received his undergraduate education at the California Institute of Technology, medical school at UCSD and a PhD in Biophysics at UC Berkeley, with thesis research in the field of medical artificial intelligence. He went on to residency at Stanford University Medical Center and fellowship at the University of New Mexico. He taught at UNM and the University of Arkansas before returning to San Diego in 1989. Dr. Catanzarite is a founding member of the Maternal-Fetal Medicine Division.

Dr. Catanzarite has a longstanding interest in continuing medical education, including computer based instruction.

Clinical interests include critical care in obstetrics, prenatal diagnosis, diagnosis and management of cardiac abnormalities of the fetus, identification and management of vasa previa, surgical and medical prevention of preterm birth, and emergency response teams in obstetrics.

Dr. Catanzarite participates in the Perinatal Subcommittees of the State Prenatal Diagnosis Program, has served as Co-director of the Sharp/Rady Children's Prenatal Diagnostic Center since 1991, and chairs the Sharp Mary Birch Pharmacy, Nutrition and Therapeutics Committee. Dr. Catanzarite organizes the Division's prenatal diagnosis conferences and has been course coordinator for our continuing medical education events. He ran his 44th marathon in 2011, and is nearing the finish line for completion of a book on exercise and fitness for the over-50 crowd.

Dr. Catanzarite speaks conversational Spanish, and some German and Russian.

## RESEARCH ACTIVITIES

### Holly Casele, MD

- (With others in the division) Validation of a non-invasive maternal plasma marker in screening for fetal aneuploidy (2 studies)

### Val Catanzarite, MD

- (With others in the division) Prenatal diagnosis, obstetric management, and neonatal outcomes in vasa previa
- (With others in the division) Fetal anemia: A comprehensive review
- (With others in the division) OB Team Stat at Sharp Mary Birch: the first five years
- We are in the planning process for a multicenter study to assess influence of ethnicity on the nasal bone during the 11-14 week sonogram

### Larry Cousins, MD

- Validation of a non-invasive maternal plasma marker in screening for fetal aneuploidy (2 studies)
- Intra-amniotic infection assessment tools
- (With others in the division) Prenatal diagnosis, obstetric management, and neonatal outcomes in vasa previa

### Sean Daneshmand, MD

- Randomized trial of intramuscular progesterone in preterm birth prevention
- (With others in the division) Prenatal diagnosis, obstetric management, and neonatal outcomes in vasa previa

### Wade Schwendemann, MD

- (With others in the division) Fetal anemia: A comprehensive review. Major Presentations Bird LM, Catanzarite V, Shea TJ, Willert JR. The Association of Alpha-Thalassemia with Congenital Anomalies. David W. Smith Workshop on Malformations and Morphogenesis, Philadelphia, PA, August 2009

## PRESENTATIONS

**Cousins L.** Natural progesterone administration and the risk of medical complications of pregnancy: secondary analysis from a multinational, randomized, double blind, placebo controlled trial. Society for Maternal-Fetal Medicine Annual Meeting, San Diego, CA, 2009

**Schwendemann W.** A Simulation Model for Fetoscopic Laser Photocoagulation. Society for Maternal-Fetal Medicine Annual Meeting, San Diego, CA, 2009

**Schwendemann W.** Vitamin C does not prevent ROS-mediated Syncytin expression or trophoblast differentiation. Society for Maternal-Fetal Medicine Annual Meeting, San Diego, CA, 2009

**Schwendemann W.** (1) Cervical models to teach interns accurate dilatation and effacement assessment skills during pregnancy; (2) Improvement in breast exam skills during an intern training program; (3) Changes to the PRIMER (Procedural Centered Repetition Involving Montessori-type Experience and Rehearsal) Program. CREOG/APGO Annual Meeting, San Diego, CA, 2009

**Trivedi N,** Phan J, Woelkers D. Urine sample characteristics do not affect measurement of urinary sFlt-1 or PlGF. Society of Maternal Fetal Medicine, 2009 Annual Meeting, San Diego, CA, January 2009

**Trivedi N,** Valencia M, Basu T, Fortlage D, Bansal V, Ramos G, Kelly T, Coimbra R. Radiation exposure in the pregnant trauma patient: Implications for fetal risk counseling. Society of Maternal Fetal Medicine Annual Meeting, San Diego, CA, January 2009

- Adamczak J.** Critical Care Symposium: Case presentation. Society of Maternal Fetal Medicine Annual Meeting, San Diego, CA, January 2009
- Trivedi N,** Valencia M, Bansal V, Kelly T, Coimbra R, Moore T. The predictive value of injury severity score on outcomes of pregnant trauma patients. American College of Obstetrics & Gynecology Annual Meeting, Chicago, IL, May 2009
- Trivedi N,** Tarsa M, Hartney C, Levy D, Anton T, Pretorius D. Congenital cardiac lesions: Prenatal reading vs outcomes. American Institute of Ultrasound in Medicine, New York, NY, April 2009
- Trivedi N,** Guo G, Robson P, Laurent L. Do MicroRNAs play a role in early embryogenesis in Dicer 1-null mice? Society for Maternal Fetal Medicine Annual Meeting, Chicago, IL, February 2010
- Trivedi N,** Wen E, Aguayo J, Tolen J, Agent S, Ramos G, Moore T. Impact of diagnostic intervals in gestational diabetes on glycemic control and pregnancy outcomes. Society of Gynecologic Investigation Annual Meeting, Orlando, FL, March 2010
- Trivedi N,** LaCoursiere Y, Wen E, Aguayo J, Tolen J, Ramos G. The impact of depressed mood on glycemic control and pregnancy outcomes in women with diabetes. Society for Gynecologic Investigation Annual Meeting, Orlando, FL, March 2010
- Trivedi N,** Liao X, Guo G, Robson P, Liao X, Laurent L. The role of microRNAs in early mammalian development. International Society for Stem Cell Research Annual Meeting, San Francisco, CA June 2010
- Adamczak J.** Maternal height is independently associated with Cesarean delivery. Poster presented at 2010 American College of Obstetrics and Gynecology Annual Meeting
- R, Nutescu EA, Paidas M, Thorp J, Zehnder J, for the Pregnancy and Thrombosis Working Group. *Am J Obstet Gynecol*, 197(5):457, 2007.
- Catanzarite V,** Hilfiker M, **Daneshmand S,** Willert J. Prenatal diagnosis of fetal hepatoblastoma: Case report and review of the literature. *J Ultrasound Med*, 27(7):1095-8, 2008.
- Schwendemann W,** Contag S, Wax J, Miller R, Polzin W, Koty P, Watson W. Sonographic findings in trisomy 9. *J Ultrasound Med*, 28(1):39-42, 2009.
- Nitsche J, McWeeney D, **Schwendemann W,** Rose C, Davies N, Watson W, Brost B. In-utero stenting: Development of a low-cost high-fidelity task trainer. *Ultrasound Obstet Gynecol*, 34(6):720-3, 2009.
- Schwendemann W,** Contag S, Koty P, Miller R, Devers P, Watson W. Ultrasound findings in trisomy 22. *Am J Perinatol*, 26(2):135-7, 2009.
- Nitsche J, McWeeney D, **Schwendemann W,** Rose C, Davies N, Watson W, Brost B. In-utero stenting: Development of a low-cost high-fidelity task trainer. *Ultrasound Obstet Gynecol*, 34(6):720-3, 2009.
- Trivedi N,** Ylagan M, Moore T, Bansal V, Wolfson T, Fortlage D, Coimbra R, Kelly T. Predicting major outcomes following trauma in pregnancy. Submitted to *British Journal of Obstetrics & Gynaecology*.
- Trivedi N,** Tarsa M, Hartney C, Levy D, Anton T, Pretorius D. Congenital cardiac lesions: Prenatal reading vs outcomes. *Journal of Ultrasound Medicine*, in press 2011.
- Ludmir J, **Adamczak J,** Schwartz N. Gabbe: *Obstetrics: Normal and Problem Pregnancies*, 6th ed, Book chapter, Surgical Procedures in Pregnancy, 2010.
- Adamczak J,** Oyelese Y, Tobon L, Burton A, Ashkinadze E, Canterino J, Smulian J. The significance of a positive second trimester serum screen for Trisomy 18. *The Journal of Maternal-Fetal & Neonatal Medicine*, in press 2011.
- Gambling D, **Catanzarite V,** Fisher J, Harms L. Anesthetic management of a pregnant woman with Gorham-Stout disease. *Int J Obstet Anesth*, 20:85-8, 2011.
- Munden A, Butschek R, Poeltler D, Krohne S, Tom W, Alió A. Ritter M, **Catanzarite V,** Mendoza A, Smith D, Friedlander M, Friedlander, S. A prospective longitudinal study documenting the incidence of infantile hemangiomas and their association with placental anomalies. Submitted for publication 2011.

## PUBLICATIONS

- Casele H.** The use of unfractionated heparin and low molecular weight heparins in pregnancy. *Clinical Obstetrics and Gynecology*, 49(4):895-905, 2006.
- Casele H,** Grobman W. Cost effectiveness of thromboprophylaxis with intermittent pneumatic compression at cesarean delivery. *Obstet Gynecol*, 108(3):535-40, 2006.
- Duhl A, Ural S, Branch W, **Casele H,** Cox-Gill J, de Veciana M, Hamersley SL, Hyers T, Katz V, Kuhlman

# NEUROSURGERY

Rady Children's Specialists San Diego's (RCSSD) Neurosurgery Division has had a tremendously successful year, expanding its clinical activities and research, training the next generation of pediatric neurosurgeons, and continuing to broaden its national and international impact on neurosurgical care. Thanks to philanthropy and to the commitment of RCHSD physicians, nurses, staff and volunteers, we are able to provide the best neurosurgical care available to all children.

The Division of Neurosurgery is among the most respected centers in the United States. The Division provides pediatric surgical evaluation, surgery and pre-operative and post-operative care for disorders of the brain, spine and peripheral nerves. Among the conditions treated are cerebrovascular malformations, surgical treatment for epilepsy, peripheral nerve disorders or injuries, brain and spinal cord tumors, cerebrospinal fluid diversion, and craniofacial diseases. From July 2010 to June 2011, RCSSD's Pediatric Neurosurgeons performed over 597 surgeries, including procedures for Brain Tumors (12%) including 12 skull base and 6 transsphenoidal approaches, Spinal Cord Tumors (2.5%), and CSF Diversion or shunting procedures (12.7%) consisting of Revisions (6%), Insertions (6%), Lumbar to Peritoneal Shunts (0.2%), and Reservoir Placement (0.5%). Our current infection rate for CSF diversion is 2.3%.

Other approaches included, Craniofacial Procedures (14.4%: 83% Open and 17% Endoscopic), Epilepsy Surgery 5.4% (17% resective surgery and 83% VNS), Congenital Anomalies (Chiari Malformations 2.7%, Closed Neural Tube Defects 2.7%, Open Neural Tube Defects 0.7%, and Encephaloceles 0.5%), Intracranial Cysts (3.4%), Brachial Plexopathies (0.7%), surgery for Spasticity (4.7%), and Vascular Anomalies (3.5%). Other cases included Skull Tumors (10.7%), Endoscopic Third Ventriculostomy (4%), and Trauma Related Cases (4.2%) with 42 Intracranial Monitor Placements. The overall infection rate was 2%.

Operative Case Duration was mean 1.9 + 1.2 hours (Range 17 minutes to 8.05 hours) with a MODE of 2 hours. 65% of the procedures were graded as significant intracranial or spinal interventions.

We continue to offer tertiary care services for some of the county's most complex cases, including cerebrovascular disease, skull base surgery, and minimally invasive endoscopic approaches. We continue to have one of the largest practices for tumors in the United States. Combined craniofacial and neurological surgery cases continue to increase from 2003 to the present. A number of patients present from National and International Referrals.

There has been significant growth in the Spasticity and Epilepsy Programs to date. The Pediatric Vascular Service remains one of the busiest in the world.

## FACULTY/STAFF

**Nathalie LeFloch RN, MSN, CPNP**, Neurosurgical Nurse Practitioner

**Hal S. Meltzer, MD**, Professor, UCSD Division of Neurosurgery and RCHSD Division of Pediatric Neurosurgery

**Michael L. Levy, MD, PhD, FACS, FAANS**, *Chief*, Division of Pediatric Neurosurgery, RCHSD and UCSD

## NEUROSURGICAL TEAMS

To maximize our ability to care for our patients, multispecialty approaches to complex neurosurgical issues have been developed. To date these include:

## NEURAL TUBE DEFECTS TEAM

The Neural Tube Defects Clinic at RCHSD provides a comprehensive management approach to children and young adults with Neural Tube Defects, both open and closed. The Clinic Team includes Medical Directors Hal S. Meltzer, MD and Andrew Skalsky, MD (Director of Psychiatry and the Pediatric Rehabilitation Program). It



*Left to right: John Crawford, Hal Meltzer, Nathalie LeFloch, Michael Levy*

is composed of the specialties of Neurosurgery, Orthopedics, Urology, Pediatric Surgery, Psychiatry, Nursing, Enterostomal Therapy, Physical Therapy, Occupational Therapy, Genetic Counseling, (Division Head Rehabilitation Medicine), and Social Work. The clinic ensures that all patients can be seen by multiple subspecialties and makes available diagnostic and evaluative services, telephone consultation for families and professionals, patient/family education in Spina Bifida, patient/family training in specific areas, such as bladder and bowel management, skin and wound care, genetic counseling, limited psychosocial counseling, and linkage to other clinical and community services.

## CNS ONCOLOGY TEAM

The Brain Tumor Service at RCHSD is one of the largest pediatric care facilities for children with brain tumors in the western United States. It consists of physicians, nurses, social workers, child life specialists, parent liaisons and chaplains who help each family through the initial surgery and subsequent radiation and/or chemotherapy regimens. Services involved include Hematology/Oncology, Neurosurgery, Neurology, Radiology, Pathology, Ophthalmology, Craniofacial, Head and Neck Surgery, and Rehabilitation. Children are treated with state-of-the-art medical and surgical programs. The center specializes in the treatment of complex tumors in children involving the midline, posterior fossa, Cerebellopontine angle, and skull base. John Crawford, MD was recruited by the

Divisions of Neurology, Oncology, and Neurosurgery in 2009 to direct the neuro-oncology program. He has had a significant impact in the past two years. He is the co-director of the multidisciplinary neuro-oncology clinic and leads the Monthly CNS Tumor Conferences.

Complex radiation therapies are provided by Kevin Murphy, MD, who serves as the Chief of the Pediatric Radiation Oncology Service, and is an active member of the Children's Oncology Group (COG,) and Hal S. Meltzer, MD. Dr. Murphy also serves as a regional resource and primary radiation oncologist for RCHSD. Dr. Murphy has used and fostered the development of a number of emerging techniques in the treatment of brain tumors in children including Stereotactic Radiosurgery (SRS), Stereotactic Radiotherapy (SRT), Intensity Modulated Stereotactic Radiosurgery/Therapy (IMRS/IMRT), Hypo-fractionated Stereotactic Radiotherapy and Gliosite Iotrex brachytherapy. Dr. Meltzer continues to develop the Gamma Knife Stereotactic Program.

The division has developed a tissue bank at RCHSD (IRB 091542) and has developed close relationships with laboratories at the Scripps Institute, UCSD, and Burnham Institute over the past two years. We have recently evaluated the Stem Cells Laboratories at the Central Institute of Neurosciences in Kiev, Ukraine, with Alexi Terskikh, PhD of the Burnham Institute, to develop a closer working relationship between the three institutions.

## BRACHIAL PLEXUS TEAM

Over the past three years, the division assisted in developing a multidisciplinary team for children with brachial plexus palsy consisting of orthopedics, neurosurgery, occupational therapy/hand therapy, and physician assistants and nurse clinic coordinators. They bring many years of expertise dealing with the complex issues that can arise, and they have seen hundreds of children with brachial plexus injuries. The team provides comprehensive evaluations and follow-up services as needed. Brachial plexus and other peripheral nerve surgeries represent a continued weakness at RCHSD that we continue to address in conjunction with the UCSD Department of Neurosurgery.

## NEUROSURGERY AND PEDIATRIC DYSMORPHOLOGY

Craniofacial Services and Plastic Surgical Services and the Neurocraniofacial Team at RCHSD are among the most respected centers in the United States. The Division's surgeons and physicians have achieved international reputations in craniofacial surgery, genetics and dysmorphism, neurological surgery, bone biology and basic bone research, and information technology. Presently, the Division offers tertiary care services for some of the county's most complex cases, including major skull base surgery, endoscopic cranial reconstruction, distraction osteogenesis for midface and mandibular advancement, apnea and airway problems in newborns and children, orbital tumors, facial nerve paralysis, microsurgery and pediatric burn care. From 2010 to 2011, we performed 86 Craniofacial Procedures (69 Open and 17 Endoscopic). The Neurosurgical and Craniofacial Services are seeing clinic patients primarily in the Fresh Start Children's Hospital Clinic and involved directly with the patient populations brought to RCHSD from other countries for charitable surgical interventions.

## NEUROVASCULAR

A specific Vascular Clinic Program is held at RCHSD with participation from institutions throughout the San Diego area including UCSD, Sharp, San Diego Naval Medical Center and Kaiser Permanente Medical Center. The clinic is dedicated to a multidisciplinary approach toward the management of children and adults with complex or deforming vascular lesions. Dr. Lawrence F. Eichenfield is director of the vascular lesion clinic and is an internationally recognized expert in the area of pediatric and adolescent dermatology. The multidisciplinary team includes renowned specialists in plastic and craniofacial surgery, dermatology, diagnostic imaging and interventional radiology, laser surgery, genetics, orthopedics, otolaryngology and ophthalmology. The Division initiated a novel Cerebrovascular Multidisciplinary Clinic in 2009 includ-

ing Neurosurgery, Neurology, Radiation Oncology, and Neuro-interventional Radiology. We now perform Pediatric Neuro-Interventional procedures at RCHSD with the addition of Sean Pakbaz, MD. He assists in the performance of diagnostic and therapeutic interventions for cerebral vascular malformations and tumors.

## MEMBERSHIP IN PROFESSIONAL SOCIETIES

Participation in professional societies has occurred at the regional, national, and international levels with a diffuse focus on numerous aspects of medicine. At the local level, Dr. Levy has been involved with the Los Angeles County Medical Association, Salerni Collegium-University of Southern California School of Medicine, California House Officer Medical Society, and Los Angeles Academy of Medicine. At the regional level, Dr. Levy has been involved with the California Medical Association, California Neurosurgical Association for Pediatrics, the American College of Surgeons in Los Angeles and San Diego, the Western Neurosurgical Society, and the San Diego Medical Society. At the national level, Dr. Levy has been involved with Alpha Omega Alpha, the American Association of Neurological Surgeons, the American Medical Association, the Congress of Neurological Surgeons, the Joint Section of Cerebrovascular Neurosurgery, the Joint Section of Pediatric Neurosurgery, the American Society of Pediatric Neurosurgery, the American College of Surgeons, and the American Academy of Neurological Surgery. At the international level, Dr. Levy has been involved with the Society of University Neurosurgeons and the Italian Congress of Neurosurgery.

Dr. Levy is a member of the Physicians Advisory Committee on Healthcare (2009–Current) and an Honorary Chairman for the State of California by the National Republican Congressional Committee (Chairman Pete Sessions). He is a member of the Member Benefit Development Committee (2007–Current) for the AANS, a member of the Executive (2005–Current) and Future Meetings (2006–Current) Committees for the SUNS, and

President Elect for the SUNS (2013). Additionally, he is a Surgical Consultant for the NFL Players Association (NFLPA) (2010–Current).

## REVIEWING GRANTS AND MANUSCRIPTS

With regard to peer-review, Michael Levy is a member of the Editorial Advisory Board for the journal *Neurosurgery* (elected in 2009), the *Journal of Health Communications* (1995–Current), and *World Neurosurgery* (2009–current). Michael Levy is currently an Ad hoc reviewer for the *Journal of Biomechanical Engineering*, M Sacks (ed.) (2008–Current), the *Journal of Expert Review of Dermatology* (2007–Current), the *Journal of Neuropsychiatry and Clinical Neurosciences*, S Yudofsky (ed.) 2007–Current, and the *Journal of Clinical Neurology and Neurosurgery*, E De Deyn (ed.) (2007–Current). Michael Levy has additionally served as a reviewer for AAAS Grant Reviews (2010–Current) and previously for the Wireless Augmented Reality Prototype (WARP) In-Progress Review for NASA Headquarters, Life Sciences Division (NASA Code UL).

Michael Levy is currently on the Medical Advisory Boards for the National Hydrocephalus Association (1998–Current), Arachnoid Cyst Foundation (2004–Current), Board of Directors for the Autism Tree Project Foundation (2002–Current), the Medical Board of Directors for Stemedica Inc. (2007–Current), and an Executive Member of the Medical Board of Directors for the Holy Innocents Hospital, Mbarara, Uganda (2010–Current). Michael Levy is additionally a member for the Board of Directors for the charitable organizations INCA and OMNI.

## TEACHING

The division was certified by the American Board of Pediatric Neurological Surgery to have a Board Certified Fellowship in pediatric neurosurgery with inclusion in the Match beginning in 2009 and we have recently graduated our first Fellow in pediatric neurosurgery. Only 22 such Fellowships exist in the US and only 40% of those match a Fellow each year. We review and participate in the clin-

ical in-service education programs and assure the delivery of quality pediatric clinical services, as appropriate and feasible. This results in our providing bi-monthly conferences to the ICU Fellows, semi-annual trauma conferences, and bi-annual lectures to the ancillary and nursing personnel in the IMU and ICU, lectures to the Residents in pediatrics, and frequent presentations at Grand Rounds and Morbidity and Mortality Conference. We also participate in undergraduate, graduate and post-graduate education programs.

We have been responsible for educational conferences including Pediatrics, the Trauma Division, and the Pediatric ICU Team. Michael Levy continues our yearly International Outreach Program with visits to pediatric facilities in Managua, Nicaragua, Lima, Peru, Kiev, Ukraine, and Mbarara, Uganda, in the past years. Over the past two years, Michael Levy has worked as an Executive Board Member (and current Medical Director) on the development, and construction, and current medical management of Holy Innocents Children's Hospital in Mbarara, Uganda. He travels there every January to assess medical care and institutional needs.

We have developed Educational Skull Base Dissection Laboratories for resident education in surgical anatomy and approaches. We have helped to develop a 3D video display system which maximizes the information available to residents and medical students during surgery.

We have had significant involvement in the education of pre-medical students, medical students, residents, and fellows over the past 15 years. At the national and international level, Michael Levy has been involved in the creation of numerous educational opportunities including being a member of the CNS Publications Committee (Current), and AANS Member Benefit Development Committee (Current) which is a program that facilitates member education. For the Society of University Neurosurgeons, he was Program Director of the Annual Meeting in San Diego (2006), on the Executive Committee (2006–Current), and President Elect in 2014, 2015. He currently serves as a mentor for pre-medical students clinical rotations (2003–Present) and as a mentor for UCSD pre-medical student and resident international charity programs including INCA, OMNI, Fresh Start, and UCSD Project Nicaragua (2003–Present). He was awarded the UCSD Division of Neurosurgery Resident Teaching Award in 2007.

## AWARDS AND HONORS

### Michael Levy, MD, PhD

UCSD Division of Neurosurgery Resident Teaching Award, 2007

Best Doctors, 2001–Current

Americas Top Doctors, 2001–Current

## RESEARCH AND CREATIVE ACTIVITY ABSTRACT/POSTER PRESENTATIONS

### Divisional Publications and Presentations

#### Peer Reviewed:

Jandial R, Singec I, Duenas VJ, Ho AL, **Levy ML**, Snyder EY. Stem cells and cloning: Advances and applications. *Biologics: Targets & Therapy*, 2009.

Jandial R, Persson A, Ho AL, **Levy ML**, Snyder EY. Stem cells and CNS repair. *Developmental Neurobiology*, Elsevier, Aug. 2009.

Keshavarzi S, Ben-Haim S, Malicki D, Shayan K, Volk H, **Levy ML**. A nine-year-old boy with temporal lobe enhancing mass. *Neuropathology*, 15:1440-1444, 2009.

Jandial R, Singec I, Duenas VJ, Ho AL, **Levy ML**, Snyder EY. Stem cells and the origin of gliomas: A historical reappraisal with molecular advancements. *Biologics: Targets & Therapy*, 2009.

**Levy ML**, Ho AL, Hughes S, Menon J, Jandial R. Stem cells and the origin of gliomas. A historical reappraisal with molecular advancements. *Stem Cells and Cloning: Advances and Applications*, 2009.

Huang M, Theilmann RJ, Robb A, Angeles AM, Nichols S, Drake A, DAndrea J, **Levy ML**, Holland M, Song T, Baker D, Trauner D, Coimbra R, Lee R. Integrated imaging approach with meg and dti to detect mild traumatic brain injury in military and civilian patients. *J Neurotrauma*, 26:1213–1226, 2009.

Keshavarzi S, **Meltzer H**, Ben-Haim S, Benjamin Newman C, D Lawson J, **Levy ML**, Murphy K. Initial clinical experience with frameless optically guided

- stereotactic radiosurgery/radiotherapy in pediatric patients. *Childs Nerv Syst*, 25:837-844, 2009.
- Keshavarzi S, Hayden MG, Ben-Haim S, **Meltzer HS**, Cohen SR, **Levy ML**. Variations of endoscopic and open repair of metopic craniosynostosis. *J Craniofac Surg*, 5:1439-44, 2009.
- Ho AL, Keshavarzi S, **Levy ML**. Exploitation of genetically modified neural stem cells for neurological disease. *Adv Exp Med Biol*, 671:74-92, 2010.
- Keshavarzi S, **Meltzer H**, Cohen SR, Breithaupt A, Ben-Haim S, Newman BC, **Levy ML**. The risk of growing skull fractures in craniofacial patients. *Pediatr Neurosurg*, 317257:1-6, 2010.
- Baird L, Ho A, Svinth JR, Park M, Nguyen A, **Levy ML**. Mortality resulting from head injury in boxing. *Neurosurgery*, 67:E519-E520, 2010.
- Lyle CA, Malicki D, Senac MO, **Levy ML**, Crawford J. Congenital giant intramedullary spinal cord schwannoma. *Neurology*, 75:1752, 2010.
- Levy ML**, Levy KM, Hoff D, Amar AP, Park M, Conklin JM, Baird L, Apuzzo MLJ. Vagus nerve stimulation therapy in patients with autism spectrum disorder and intractable epilepsy: Results from the vagus nerve stimulation therapy patient outcome registry. *J Neurosurg Pediatrics*, 5:595-602, 2010.
- Jandial R, **Levy ML**. Cellular alchemy: Induced pluripotent stem cells retain epigenetic memory. *World Neurosurgery*, 75:5-6, 2011.
- Baird LC, Gonda D, Evers L, Pryor L, LeFloch N, **Levy ML**, Cohen SR, **Meltzer HS**. Craniofacial reconstruction as a treatment for elevated intracranial pressure, 2011 (in review).
- Breithaupt A, Cohen SR, **Meltzer H**, Broder K, **Levy M**. Endoscopic repair of craniosynostosis: The role of minimally invasive techniques in the treatment of single suture craniosynostosis, 2011 (in review).
- Blumer JL, Reed M, Jefferson LS, Rosen DA, Schulman SR, Pediatric ICU Propofol Study Group, **Levy ML**. Randomized controlled trial of propofol compared with standard sedative agents for mechanically ventilated infants and children. 2009, 2011 (in review).
- Blumer JL, Reed M, Jefferson LS, Rosen DA, Schulman SR, Pediatric ICU Propofol Study Group, **Levy ML**. Mortality during the evaluation of propofol sedation in the pediatric intensive care unit. 2009, 2011 (in review).
- Park MS, **Levy ML**. Penetrating civilian craniocerebral gunshot wounds: A protocol of delayed surgery (Commentary). In: *Surgery of the Human Cerebrum*, Apuzzo MLJ (ed), Baltimore, Williams and Wilkins, 2009, SHC-247.
- Levy ML**, **Meltzer HS**. Long-term reliability of endoscopic third ventriculostomy (commentary). In: *Surgery of the Human Cerebrum*, Apuzzo MLJ (ed), Baltimore, Williams and Wilkins, 2009, SHC-621.
- Levy ML**, Nguyen A, Aryan H, Jandial H, **Meltzer HS**, Apuzzo MLJ. Robotic virtual endoscopy: Development of a multidirectional rigid endoscope. In: *Surgery of the Human Cerebrum*, Apuzzo MLJ (ed), Baltimore, Williams and Wilkins, 2009, SHC-599-SHC-606.
- Berta S, **Levy ML**. Endoscopic surgery for intraventricular brain tumors in patients without hydrocephalus (commentary). In: *Surgery of the Human Cerebrum*, Apuzzo MLJ (ed), Baltimore, Williams and Wilkins, 2009, SHC-1047-SHC-1048.
- Jandial R, **Levy ML**. Endoscopic treatment of cerebrospinal fluid pathway obstructions (commentary). In: *Surgery of the Human Cerebrum*, Apuzzo MLJ (ed), Baltimore, Williams and Wilkins, 2009, SHC-1091-SHC-1092
- Levy ML**, Newman B. Three dimensional endoscopic pituitary surgery. *Neurosurgery*, 64:295, 2009 (Comment).
- Novak J, Horodecka-Wardega L, Usowicz T, **Levy ML**. A retrospective study on the value of identifying children with autism utilizing the M-CHAT by neurodevelopmental pediatricians in Poland and the United States. *The Int J. Child Neuropsychiatry (Suppl)*, 79, 2010 (Abstract).
- Ho AL, Keshavarzi S, **Levy ML**. Exploitation of genetically modified neural stem cells for neurological disease. *Adv Exp Med Biol*, 671:74-92, 2010 (Abstract).

### Chapters:

- Levy ML**, Park MS. Biomechanical aspects of sports-related head injury. *Physical Medicine and Rehabilitation Clinics of North America*, Kraft GH (ed), 20:29-38, 2009.
- Jandial R, Persson A, Ho A, **Levy ML**, Snyder EY. Stem cells and CNS repair. In: *Encyclopedia of Neuroscience*, Larry R. Squire, ed., Elsevier Ltd. pp 401-409, 2009.
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- Ho AL, Keshavarzi S, **Levy ML**. Exploitation of genetically modified neural stem cells for neurological disease. In: *Frontiers in Brain Repair*; (Rahul Jandial, ed.) Landes Bioscience, pp 74-89, 2010.
- Levy ML**, Baird LC. Core operative techniques in operative neurosurgery: Section 5 Editor. *Core Operative Techniques in Operative Neurosurgery*, (Rahul Jandial, Paul C. McCormick, and Peter M. Black, eds.) Elsevier Saunders, pp 322-371, 2011.
- Gonda D, Baird LC, **Levy ML**. Encephalocele repair. *Core Operative Techniques in Operative Neurosurgery*, (Rahul Jandial, Paul C. McCormick, and Peter M. Black, eds.) Elsevier Saunders, pp 343-348, 2011.
- Baird LC, Thomas AP, **Levy ML**. Arachnoid cyst fenestration. *Core Operative Techniques in Operative Neurosurgery*, (Rahul Jandial, Paul C. McCormick, and Peter M. Black, eds.) Elsevier Saunders, pp 356-360, 2011.
- Baird LC, **Levy ML**. Endoscopic third ventriculostomy. *Core Operative techniques in Operative Neurosurgery* (Rahul Jandial, Paul C. McCormick, and Peter M. Black, eds.), Elsevier Saunders, pp 361-366, 2011.
- Mendez K, Levy KM, Nelms M, Hoff D, Novak JM, **Levy ML** Cultural and neurological considerations in the early identification of children with autism—highlighting cross-cultural variations in the neurodevelopment screenings of toddlers. In: *Autism/Book 3*, InTech Publishing, Croatia, 2011.
- Menon J, **Levy ML**. Keyhole approaches to temporal arachnoid cysts. *Neurosurgery Tricks of the Trade*, (Berta S, Nader R, Levy ML, eds.) Thieme, New York 2011 (in press).
- Baird LC, **Levy ML**. The temporal approach. *Neurosurgery Tricks of the Trade*, (Berta S, Nader R, Levy ML, eds.) Thieme, New York 2011 (in press).

#### Books Edited:

- Berta S, Nader R, Levy ML (eds). *Neurosurgery Tricks of the Trade*, Thieme, New York 2011 (in press).

## PRESENTATIONS

- Levy ML**. Invited Peer Review, Is endothelial nitric oxide synthase gene mutation a risk factor in the etiology of intraventricular hemorrhage? Presented at the Annual Meeting of the AANS, San Diego, CA, 2009
- Huang M, Theilmann RJ, Robb A, Angeles AM, Nichols S, Drake A, DAndrea J, **Levy ML**, Holland M, Song T, Baker D, Trauner D, Coimbra R, Lee R. Integrated imaging approach with meg and dti to detect mild traumatic brain injury in military and civilian patients. Presented at the 2009 IBMISPS World Congress, Boston, MA, 2009
- Cohen S, Baird L, Pryor L, Evers L, Shetty A, Gossman A, **Meltzer H, Levy ML**. Reduction in Intracranial pressure following craniostomy surgery. Presented at the American Cleft Palate—Craniofacial Association Annual Scientific Session, Scottsdale, AR, 2009
- Cohen S, Pryor L, Shetty A, Gossman A, **Meltzer H, Levy ML**. Reduction cranioplasty for hydrocephalic macrocephaly. Presented at the American Cleft Palate—Craniofacial Association Annual Scientific Session, Scottsdale, AR, 2009
- Levy ML**. Surgical considerations in the treatment of children with traumatic EDH. Presented at the Neuro-Fest 2nd Annual Scientific Session, San Diego, CA, 2009
- Baird L, **Meltzer HS, Levy ML**, Tersikh A. Maternal embryonic leucine zipper kinase is a promising therapeutic target for medulloblastoma. Presented at the 37th Annual Meeting of the ISPN, Pasadena, CA, 2009
- Baird L, **Meltzer HS, Levy ML**, Tersikh A. Maternal embryonic leucine zipper kinase is a promising therapeutic target for medulloblastoma. Presented at the 38th Annual Meeting of the AANS/CNS Section on Pediatric Neurosurgery, Boston, MA, 2009
- Cohen S, Pryor L, Shetty A, Gossman A, **Meltzer H, Levy ML**. The risk of growing skull fractures in craniofacial patient. Presented at the 37th Annual Meeting of the ISPN, Pasadena, CA, 2009
- Cohen S, Kim D, Breithaupt A, Meltzer H, Gosman A, **Levy M**. Understanding the role of endoscopic and minimally invasive treatments in craniostomy. Presented at ISCFs – Distraction, Paris, France, 2009
- Levy ML**. Neurosurgical aspects of closed neural tube defects. Presented at the Visiting Professor Conference,

Holy Innocents Hospital, Mbarara University medical Center, Mbarara, Uganda, 2010

**Levy ML.** Neurosurgical aspects of head trauma. Presented at the 24th Annual San Diego International Conference on Child and Family Maltreatment, San Diego, CA, 2010

**Levy ML.** Neurosurgical aspects of head trauma. Fluid in the brain. Presented at the 24th Annual San Diego International Conference on Child and Family Maltreatment, San Diego, CA, 2010

Novak J, Horodecka-Wardega L, Usowicz T, **Levy ML.** A retrospective study on the value of identifying children with autism utilizing the M-CHAT by neurodevelopmental pediatricians in Poland and the United States. Presented at the 11th Annual Child Neurology Congress, Cairo, Egypt, 2010

Foley J, Harvey H, Hilfiker M, **Levy ML,** Bush R, Duthie S. An analysis of scheduled follow-up computed tomography (CT) scans in pediatric trauma patients with closed head injuries. Presented at the 40th Critical Care Congress, San Diego, CA, 2010

Huang MX, Nichols S, Robb A, Angela A, Drake A, Asmussen S, D'Andrea J, Chun W, **Levy M,** Cui L, Song T, Baker D, Hammer P, McLay R, Theilmann RJ, Coimbra R, Diwakar M, Trauner D, Steel J, Cheung C, Liu T, Harrington D, Lee RR. Examining traumatic brain injury patients: Diagnostic value of an automatic meg slow-wave imaging approach for mild and moderate TBI patients with blast and non-blast courses. Presented at the Annual San Diego Neuroscience Symposium, Veterans Hospital, San Diego, CA, 2010

Amene C, Minxiong H, **Levy ML.** Presurgical determination of language cortex using MEG: Can we differentiate expressive and receptive areas? Presented at the 2010 Annual Meeting of the CNS, San Francisco, CA, 2010

Amene C, **Levy ML.** Management of third ventricular arachnoid cysts in children. Presented at the 2010 Annual Meeting of the CNS, San Francisco, CA, 2010

Levy ML, Baird L. Combined approaches for the treatment of craniopharyngioma. Presented at the Annual American Society for Pediatric Neurosurgery, Lanai, HI, 2011

Udaka YT, Yeh-Haeur L, **Levy ML,** Crawford JR. Predicting recurrence in pediatric central nervous system (CNS) low grade gliomas: The role of MRI surveillance in asymptomatic children. Presented at the

Annual American Association of Neurology Meeting, Honolulu, Lanai, HI, 2011

**Levy ML,** Baird L, Toney J. Punch drunk; Repetitive injury in boxing; Joe Louis. Presented at the Annual Society for University Neurosurgeons Meeting, Athens Greece, and Istanbul, Turkey, 2011

**Levy ML.** Concussion in young athletes. Presented at the Annual RCHSD When Youth Sports Get Dangerous Symposium, San Diego, CA, 2011

## RESEARCH AND FUNDING

Revolutionary surgical techniques and technologically advanced approaches remain a primary pursuit of the Neurosurgical Team. New technology in neurosurgery includes the continued development of novel Robotic and three-dimensional endoscopes, High Definition 3D monitors for intra-operative use, and the potential uses of intra-operative CT imaging in 2011. We continue to work with our partner companies to advance closer to the reality of true stereoscopic endoscopes (Hans Hoag, PhD – Endactive technologies; Wei Su, PhD - IntraVista Medical Systems Inc., and Kaiser Medical). We have assisted in the development of a 3D displays which is utilized in our operative setting as a front projection 3D image. The primary purpose is for education and allowing the nursing and anesthesia teams to be consistently aware of the course of the surgical intervention.

Current avenues of research also include the evaluation of cGMP in novel neuronal stem cell lines, MEG imaging and neuropsychiatric testing for mild closed head trauma in adolescents, and the potential benefits of Neuronal and Mesenchymal based stem cells for treatment of stroke.

## COLLABORATIONS/GRANTS

Maternal Leucine Zipper Kinase (MELK) expression in pediatric brain tumors and role in brain tumor growth. RCHSD IRB# 091542; Alexey Terskikh, PhD (PI) Burnham Institute, **Michael Levy, MD, PhD,** UCSD; Funded by the Burnham Institute, Rahul Jandial, MD, PhD, City of Hope Medical Center

Using Discarded CSF and Tissue to establish a neurosurgical tissue bank. RCHSD IRB# 091542; **Michael Levy, MD, PhD** (PI) UCSD; Unfunded

Neurosurgical Database at RCHSD for prospective and Retrospective review of neurosurgical cases. RCHSD IRB# 12120; **Michael Levy, MD, PhD** (PI) UCSD; Unfunded

Performing Affymetrix SNP 6.0 arrays on >1200 of MAGIC bank medulloblastomas and using nanostring to subgroup medulloblastomas. RCHSD IRB# 091542; Michael D Taylor, MD (PI) University of Toronto, **Michael Levy, MD, PhD**, UCSD; Funded by the University of Toronto

SBIR Grant: To correlate the status of MYC/MYCN amplification in CFC-HMW DNA and matched tumor DNA by quantitative PCR. RCHSD IRB# 091542; Jayant P. Menon, MD (PI) UCSD, **Michael Levy, MD, PhD** (Co-PI) UCSD; Funded by Biological Dynamics

An Integrated MEG and DTI Study for Differential Diagnosis of Mild TBI and PTSD. Application Number: 1 R01 NS072601-01; Review Group: ZRG1 NT-B (09); Center for Scientific Review Special Emphasis Panel; Mingxiong Huang PhD (PI) UCSD, **Michael Levy, MD, PhD** (Co-I) UCSD

Diagnosing Mild TBI in VA and Active Duty Military Patients using MEG and DTI. Application Number: 1 I01 CX000499-01; Review Group: NURC; Mingxiong Huang PhD (PI) UCSD, **Michael Levy, MD, PhD** (Co-I) UCSD

Biomechanics of tissue welding. Jayant P. Menon, MD (PI) UCSD, **Michael Levy, MD, PhD** (PI) UCSD

SBIR: Nucleotide signatures of pediatric brain malignancy. RCHSD IRB# 091542; Jayant P. Menon, MD (PI) UCSD, **Michael Levy, MD, PhD** (PI) UCSD

Human lysophosphatidic acid (LPA levels) and genetic mutations in CNS birth defects. RCHSD IRB# 091542; Yun Yung, PhD (PI) Scripps Research Institute, **Michael L. Levy, MD, PhD** (PI) UCSD  
 Aim 1: To Collect and analyze CSF and blood from premature infants with CNS abnormalities and determine LPA amounts by mass spectroscopy in addition and to determine chemical forms of LPA; Aim 2: Identify polymorphisms, CNVs, other mutations in LPA signaling pathways from cells derived from CSF and blood samples in Aim 1; Aim 3: Identify LPA sig-

naling pathway polymorphisms, CNVs, other mutations associated with structural brain defects from con-sanguineous samples. The genes to examine include: Autotaxin (ATX), LPAR1-LPAR6 (LPA receptors), Lipid phosphate phosphatases, and Rho GTPases

Examine a possible etiology of fetal hydrocephalus by determining whether there is a correlation between clinical hydrocephalus and concentration of lysophosphatidic acid (LPA). Yun Yung, PhD (PI) Scripps Research Institute, **Michael L. Levy, MD, PhD** (PI) UCSD; Project 1: CNS structural birth defects produced by alterations in prenatal LPA signaling, Project leader: Jerold Chun, MD, PhD Scripps Research Institute; Project 2: Animal studies using in vivo LPA modulation and genetic mutants, Project leader: Joe Gleason, MD UCSD (Co-PI), **Michael Levy, MD, PhD** UCSD; Project 3: Chemical proof-of-concept tools and approaches for LPA signaling in CNS defects, Project leader: Peppi Prasit, PhD, Amira Pharmaceuticals

Developing an in vivo model for verifying neural stem cell potency in chicken embryonic brain. **Michael Levy, MD, PhD** (Co-PI) UCSD; Funded by Department of Research and Development, Stemedica Cell Technologies  
 Utilization of intraoperative CT angiography and comparison to standard angiography in children with vascular malformations. **Michael Levy, MD, PhD** (PI) UCSD; Funded by Ceretom Technologies

## FUNDED STUDIES

Development of neuropathology core telemetry for the intra-operative review of tissue harvested from children and adolescents with brain tumors. **Michael Levy, MD, PhD** (PI) UCSD; \$280,000.00 (Equipment cost Sponsored by BioImagene)

Phase I/II, multi-center, open-label study to assess the safety, tolerability, and preliminary efficacy of a single intravenous dose of allogeneic mesenchymal bone marrow cells to subjects with ischemic stroke. IRB-100325R; **Michael Levy, MD, PhD** (PI) UCSD; \$812,736.00 (Sponsored by Stemedica (IND 14328))

An exploratory Phase 2 study evaluating the efficacy and safety of fibrin sealant. Vapor heated, solvent/detergent treated (FS VS S/D) 500 S-APR for the sealing of dura

defect sutures in posterior fossa surgery. IRB-12121;  
**Michael Levy, MD, PhD** (PI) UCSD; \$73,730.18  
(Sponsored by Baxter)

Diagnosing mild TBI in adolescents and adults using  
MEG and DTI. Mingxiong Huang PhD (PI) UCSD,  
**Michael Levy, MD, PhD** (PI) UCSD; \$99,741.00  
(Funded by the NFL)

## UNIVERSITY AND PUBLIC SERVICE

### **Michael Levy, MD, PhD**

RCHSD – Advertising and Public Relations Committee  
RCHSD – Innovation and Technology Committee  
RCHSDI – HIPAC  
RCHSDI – U.S. News and World Report Subcommittee  
RCHSD – Academic Council Philanthropy Team  
RCHSD – Brain Trauma Research Focus Group  
RCHSD – Liam’s Fund Charity

## ESTABLISHMENT OF NEW TEACHING VENUES

The Division has developed Educational Skull Base Dissection Laboratories for Resident Education in surgical anatomy and approaches. We have worked with Johnson and Johnson Medical to develop educational materials regarding the use of hemostatic agents during neurosurgical procedures.

## PATENTS AND INVENTIONS

Razorbill Pluronic Surfactant

Based Bone Wax (CHLA #99-09 Bonewax) which allows  
for the use of bone wax in all scenarios without risk of  
infection or non-union

EndActive Robotic Omnidirectional Neuroendoscope (Hans  
Hoag–California Institute of Technology–Inventor).

## PUBLIC SERVICE AND OUTREACH PROGRAMS

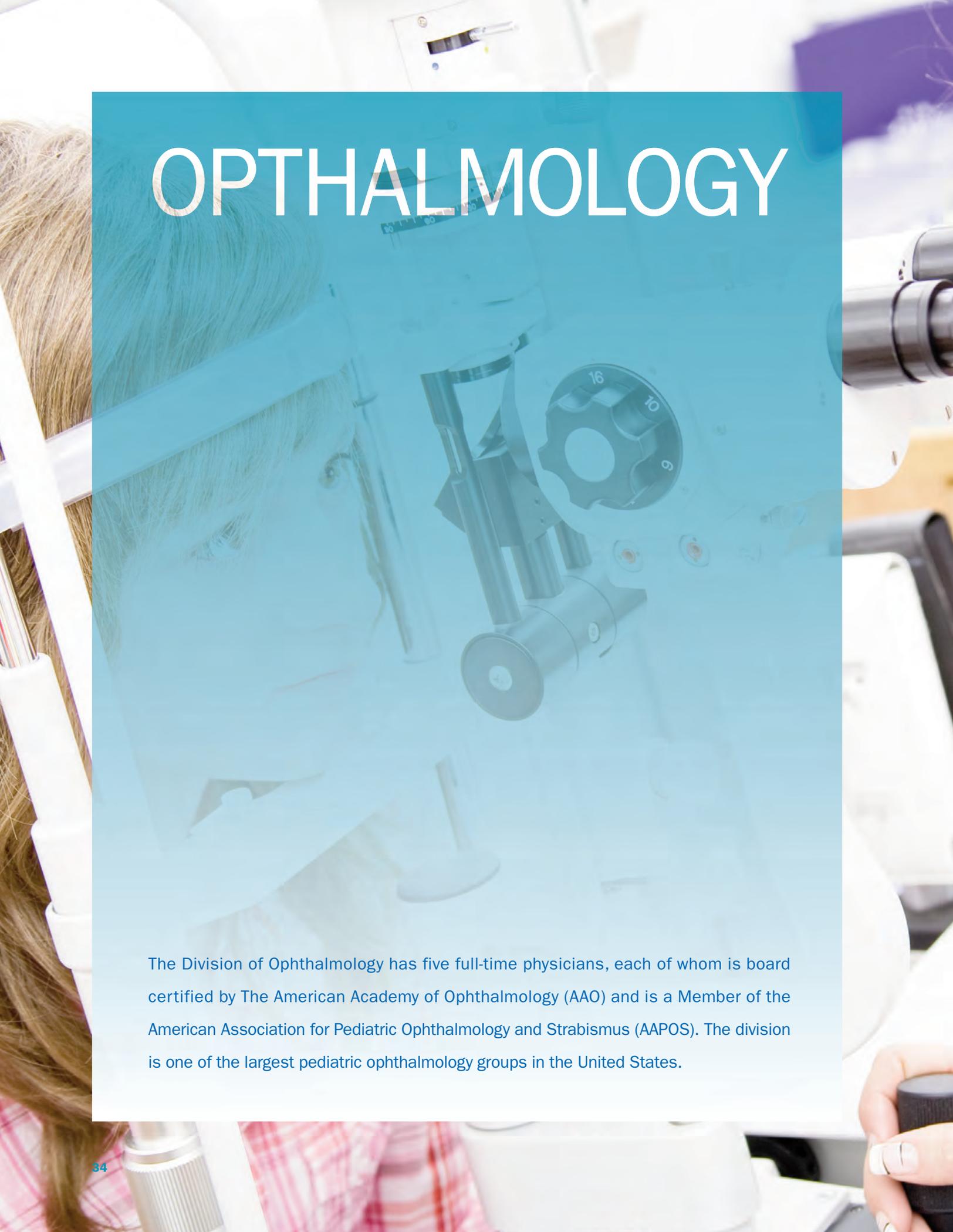
The Autism Tree Project Foundation which was founded in 2003 to promote autism education and provide early intervention programs in the California community. Our main programs are a Preschool Screening Program, A quarterly Mentor program that pairs families new to the autism diagnosis with a “Mentor” to support and guide the family as well as assist in identifying autism- related resources in the community, and a Preschool Teacher Training Program.

Liam’s Fund, which assists in procuring sophisticated equipment for use in the neurosurgical operating room in hopes of reducing the number of surgeries performed and significantly increasing the number of successful procedures for children requiring neurosurgical interventions. Over the past year Liam’s Fund has assisted in the funding of the Neurosurgical Operating room at RCHSD, now called the Liam’s Fund Neurosurgical Suite.

Holy Innocents Children’s Hospital Board of Directors. assisted with the Development and Construction of the HICH Children’s Hospital in Mbarara, Uganda

Project Nicaragua, INCA and Open Mind Neurosurgical International (OMNI), which are non-profit organizations providing charitable medical services in the form of neurosurgical procedures and the provision of complex neurosurgical equipment to the underserved and needy around the world. In combination with the Variety Children’s Lifeline, neurosurgeons from RCHSD have traveled to five countries over the past two years. In addition to the surgeries performed in San Diego in 2010, members of the Neurosurgery Division performed surgeries in Lima, Peru, Managua, Nicaragua, and Kiev, Ukraine through these Pediatric Neurosurgical Outreach Programs.

# OPHTHALMOLOGY

A young girl with blonde hair is wearing a head-mounted microscope. The microscope is white and black, with a large lens in front of her eye. The background is a clinical setting with various pieces of equipment. The image is overlaid with a semi-transparent blue rectangle containing text.

The Division of Ophthalmology has five full-time physicians, each of whom is board certified by The American Academy of Ophthalmology (AAO) and is a Member of the American Association for Pediatric Ophthalmology and Strabismus (AAPOS). The division is one of the largest pediatric ophthalmology groups in the United States.



*Left to right: Angela Moll, Sandy Kohler, Colin Scher, Yvette Jockin, Edward Brown, Preeti Bansal*

## FACULTY/STAFF

**Colin A. Scher, MD, Director**

**Yvette M. Jockin, MD**

**Henry O'Halloran, MD**

**Preeti Bansal, MD**

**Angela M. Moll, MD**

**Edward W. Brown, MD**

**Sandra Kohler, C.O., C.O.M.T.**

**Dr. Colin Scher** has practiced pediatric ophthalmology at Rady Children's Hospital-San Diego (RCHSD) for over 20 years. He earned his medical degree from the University of Cape Town in South Africa. While completing his ophthalmology residency at the University of Pennsylvania, he was honored as the senior resident who most exemplified the ideal university resident.

Dr. Scher has received awards from the American Academy of Pediatrics and San Diego City schools for outstanding care for underprivileged and uninsured children. In addition to treating pediatric patients, Dr. Scher is a specialist in adult strabismus.

**Dr. Yvette Jockin** specializes in pediatric ophthalmology. She has practiced at RCHSD since 1997. A summa cum laude graduate, she earned her medical degree from the State University of New York at Buffalo, School of Medicine & Biomedical Sciences where she was named class valedictorian. She completed a residency in ophthalmology at Case Western Reserve University Hospitals in Cleveland. Her postgraduate training also included a fellowship in pediatric ophthalmology at Children's Hospital of Philadelphia.

While attending medical school, she was elected to the Alpha Omega Alpha Medical Honor Society and she received the Dr. Janet M. Glasgow Award and the Dr. Thomas J. Guttuso Ophthalmology Award.

**Dr. Henry O'Halloran** is European and American board certified in ophthalmology. He joined Rady Children's Specialists of San Diego (RCSSD) Division of Ophthalmology in November 2000.

He earned his medical degree from Trinity College Medical School in Dublin, Ireland. His postgraduate training included a residency in ophthalmology in Ireland and at the University of Kentucky in Lexington, where he

## Major Goals and Plans

- Cement amalgamation with UCSD Department of Ophthalmology
- Develop a clinical research program when the joint Rady Children's Hospital-UCSD Ph.D. comes to fruition
- Increase clinical presence in Murrietta and Encinitas
- Immediate access for emergencies
- Rapid response to in-house consultations
- Develop appropriately reimbursed contractual arrangements with regional and local NICUs
- Clinic and OR teaching of ophthalmology residents
- Increased teaching of residents in the hospital setting



served as chief resident. Dr. O'Halloran also completed a fellowship in neuro-ophthalmology at the University of Kentucky, where he was also an assistant professor.

Dr. O'Halloran's clinical interests are in neuro-ophthalmology, specifically in optic nerve disorders and the management of head injury patients. He is an active volunteer with the Mercy Outreach Surgical Team and has acted as director and treasurer of the team. He is a director of the Scripps Mercy Foundation and a board member of the American Ireland Fund.

**Dr. Preeti Bansal** is board certified in ophthalmology. She earned her medical degree from the University of Kentucky and completed her residency at the same institution where she was awarded the Tschafter Resident Teaching Award. She acted as chief resident prior to a fellowship in pediatric ophthalmology and strabismus at Duke University. She has been with RCSSD since 2005.

**Dr. Angela Moll** is a graduate of Wayne State University School of Medicine and completed a residency at the Kresge Eye Institute at Wayne State where she won the Barsky Research Award. She served as fellow in pediatric ophthalmology and strabismus at Children's Hospital of Michigan. She has been with RCSSD since 2008.

**Dr. Edward Brown** has 28 years of experience in pediatric ophthalmology providing routine and specialized eye care for infants, children, and adolescents. He graduated from Temple University Medical School and spent his residency in ophthalmology at the Oakland Naval Hospital and the University of California, San Francisco. He finished his training in pediatric ophthalmology after completing a fellowship at the Children's Hospital of Los Angeles in affiliation with USC. He recently joined RCSSD's ophthalmology team after 25 years of private practice here in San Diego.

**Sandy Kohler, CO** has over 20 years of experience in pediatric ophthalmology in the U.S. and on numerous mission trips to Mexico and Honduras. She received her training at a consortium program involving Eastern Virginia Medical School and Old Dominion University.

As an Orthoptist, Sandy is uniquely skilled in the evaluation and treatment of children and adults with eye movement difficulties. Her specialty is strabismus, amblyopia and double vision for both adults and children. Sandy has been with Rady's for over 13 years and is an active volunteer on mission trips with Mercy Outreach Surgical Team.

## CLINICAL SERVICE

All aspects of pediatric ophthalmology are covered by the physicians. Subspecialty interests include oculoplastics, neuro-ophthalmology, lens implants in children, pediatric glaucoma and adult strabismus.

The Division also offers eyeglasses for all ages starting at birth, as well as contact lens training and fitting, with special expertise in aphakic babies.

A full time orthoptist is a member of the group and provides management of the non-surgical aspects of strabismus, as well as amblyopia and refraction. She is also responsible for keeping technical support up-to-date with the latest techniques and equipment to maximize patient care.

RCSSD Ophthalmology is based on the RCHSD campus. The satellite clinics that are served include Encinitas, Escondido, Murrieta and El Centro.

The Division is especially proud of our devotion to premature babies. We are the only group of ophthalmologists servicing thirteen neonatal units ranging from Chula Vista in the South, Oceanside in the North, El Centro in the East and Rancho Springs in Riverside County.

The Division is also the only ophthalmology group that covers RCHSD for inpatient consultations, emergency room consultations, urgent care and trauma call.

All pediatric ophthalmology surgery provided by the group is done at RCHSD.

## RESEARCH ACTIVITIES

The Ophthalmology Division focuses its research efforts on Pediatric Intraocular Lens implantation, pediatric refractive surgery, pediatric glaucoma, Jacobsen's Syndrome, Angelman Syndrome and eye trauma. They are currently involved in a study for Alcon Pharmaceuticals for children ages 0-3 with congenital cataracts.

## TEACHING ACTIVITIES

The Division of Ophthalmology offers clinical training for medical students, pediatric and family practice residents and pediatric specialty fellows.

The Division is actively involved in clinical research and provides opportunities for trainees to contribute to the fields of Ophthalmology and Pediatrics.

## PUBLICATIONS

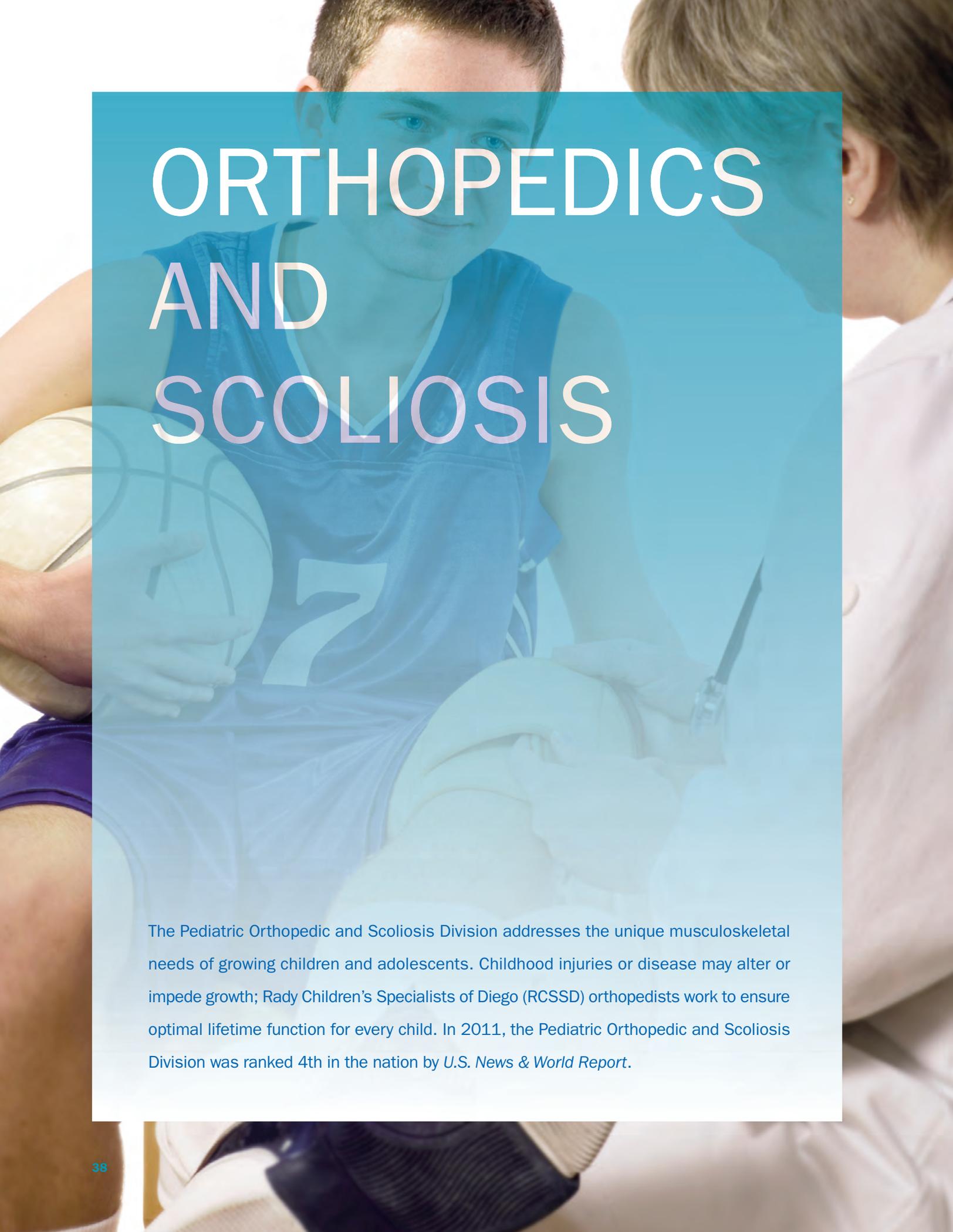
Lee WB, **O'Halloran HS**. Shaken baby syndrome. In: *Current Ocular Therapy*, Fraunfelder, Fraunfelder, Philadelphia, WB Saunders, 6th Edition, Chapter 160, 2008.

Lee WB, **O'Halloran HS**, Grossniklaus HE. Pellucid marginal degeneration and bilateral corneal perforation: Report of a case and review of the literature. *Eye and Contact Lens*, 34; 229-233, 2008.

**O'Halloran HS**. HIV-Neuroophthalmology. In: *Continuum of Neurology*, J.R. Berger (ed), American Academy of Neurology, in press.

**O'Halloran HS**, Lee WB. Accomodative esotropia. In: *Current Oculat Therapy*, Fraunfelder, Fraunfelder: Philadelphia, WB Saunders, 6th Edition, Chapter 216, 2008.

**Moll A**. Titmus Random dot stereo butterfly test in strabismus screening [AAPOS Abstract]. *JAAPOS*, 12(1):100, 2008.

A young boy in a blue basketball jersey is holding a basketball. A doctor in a white coat is examining his arm. The background is a light blue gradient.

# ORTHOPEDICS AND SCOLIOSIS

The Pediatric Orthopedic and Scoliosis Division addresses the unique musculoskeletal needs of growing children and adolescents. Childhood injuries or disease may alter or impede growth; Rady Children's Specialists of Diego (RCSSD) orthopedists work to ensure optimal lifetime function for every child. In 2011, the Pediatric Orthopedic and Scoliosis Division was ranked 4th in the nation by *U.S. News & World Report*.



*Left to right: Burt Yaszay, Henry Chambers, Peter Newton, Dennis Wenger, C. Douglas Wallace, Scott Mubarak, Maya Pring, Harish Hosalkar, Eric Edmonds, Andrew Pennick*

## FACULTY/STAFF

**Scott J. Mubarak, MD**, Professor of Clinical Orthopedic Surgery, Department of Orthopedic Surgery, UCSD; Director of Orthopedic Clinical Program, RCHSD

**Dennis Wenger, MD**, Voluntary Clinical Professor of Orthopedic Surgery, UCSD; Director of Orthopedic Training Program, RCHSD

**Henry Chambers, MD**, Professor of Clinical Orthopedic Surgery, UCSD; Director of Motion Analysis Laboratory, RCHSD; Director of Southern California Cerebral Palsy Center; Co-Director of Pediatric and Adolescent Sports Medicine

**Peter Newton, MD**, Voluntary Clinical Professor of Orthopedic Surgery, UCSD; Director of Orthopedic Research and the Scoliosis Service, RCHSD

**C. Douglas Wallace, MD**, Associate Clinical Professor of Orthopedic Surgery, UCSD; Director of Orthopedic Trauma, RCHSD

**Maya Pring, MD**, Associate Clinical Professor of Orthopedic Surgery, UCSD

**Burt Yaszay, MD**, Voluntary Assistant Clinical Professor of Orthopedic Surgery, UCSD

**Eric Edmonds, MD**, Assistant Clinical Professor of Orthopedic Surgery, UCSD Co-Director of Pediatric and Adolescent Sports Medicine

**Harish Hosalkar, MD**, Voluntary Clinical Instructor of Orthopedic Surgery, UCSD

**Andrew T. Pennock, MD**, Assistant Clinical Professor of Orthopedic Surgery, UCSD

## POSTDOCTORAL FELLOWS

**Christopher Bray, MD**

**Eric Fornari, MD**

**Matthew Schmitz, MD**

**Jacob Schulz, MD**

## Major Goals and Plans

The Pediatric Orthopedic Division at RCHSD and UCSD is recognized as one of the best in the world for its clinical care, innovative teaching and advanced research. The Division plans to:

- Be the top children's clinical and research orthopedic center in the United States, drawing patients from throughout the western United States, as well as Europe, Central and South America, and Asia. The quality of the Division's clinical work and outstanding research will ensure state-of-the-art methods for treating children's conditions.
- Continue its widely recognized fellowship training program in children's orthopedics while supplementing the international fellowship division to ensure that there are always two or three international fellows conducting research with the North American fellows.
- Actively raise funds for additional research and establish at least three funded, named eponymous professorships in children's orthopedics.
- Expand research and clinical assessment of 3-dimensional spinal and limb alignment with new EOS x-ray machine, which allows for up-right weight bearing exams.
- Expand research and clinical assessment of 3-dimensional spinal and limb alignment with new EOS x-ray machine, which allows for up-right weight bearing exams.

## NURSE PRACTITIONERS/ PHYSICIAN ASSISTANTS

**Chrissy Amundsen, PA-C**  
**Amanda Asaro, PA-C**  
**Dena K. Cassel, CPNP**  
**Linh Darnell, PA-C**  
**Allison Dickinson, PA-C**  
**Kathryn Fowle, CPNP**  
**Lynn Manheim, CPNP**  
**Sunny Park, CPNP**  
**Emily Petty, PA-C**  
**Kelly Pretorius CPNP**  
**Raquel Sanchez, PA-C**  
**Mary Lou Scott, CPNP**  
**Phil Stearns, CPNP**

## CLINICAL ACTIVITIES INPATIENT/OUTPATIENT

The Division is the only orthopedic group in San Diego and Imperial counties with specialists who practice full time pediatric orthopedics. By devoting their entire careers to the care of children, these specialists can provide individualized assessment, early diagnosis, and appropriate treatment for all pediatric and adolescent orthopedic problems, including: fracture care (cast care instructions and removal); spine abnormalities (scoliosis, kyphosis and spondylolisthesis); foot deformities (Ponseti casting, tarsal coalition, toeing in, clubfoot, flatfeet); hip disorders (hip dysplasia and dislocation, Legg-Calve-Perthes disease); sports medicine (knee and shoulder arthroscopy) brachial plexus palsy; and cerebral palsy.

The Division also works with RCHSD to provide advanced biomechanical analysis through the Motion Analysis Laboratory and pediatric imaging services.

## RESEARCH ACTIVITIES

The orthopedic research program at RCHSD is designed to keep the Division at the forefront of advances in orthopedic treatment and technology and share best practice and new discoveries with the field. The program has attracted external grants from industry, professional organizations and federal sources, as well as internal funding. In 2009, the department members contributed to 57 scientific presentations at national and international meetings (Annual Meetings of the American Academy of Orthopedic Surgeons, Pediatric Orthopedic Society of North America, Scoliosis Research Society, North American Spine Society, and the International Meeting on Advanced Spinal Techniques).

In addition to the Division's nine attending orthopedic surgeons, orthopedic research at RCHSD is conducted and carried out by many other physicians, research support staff, and trainees. Pediatric orthopedic fellows are actively involved in research during their fellowship year. International fellows as well as residents from UCSD, the U.S. Navy and U.S. Air Force regularly participate in one or more research projects during their rotations. Each year, the Division hosts a resident from the UCSD orthopedic residency program for training in orthopedic research. The Orthopedic Division also has internal resources for conducting sophisticated statistical analyses, which lends enhanced scientific validity and detailed data analysis to its research studies. The Division employs full-time administrative support for budgeting, contracting and project management.

To further its research goals in clinical, biomechanical, and in vivo research methodologies, the Orthopedic Division has established specific synergistic centers of research:

- The Center for Spinal Deformities
- The International Center for Hip Research
- The Center for Pediatric and Adolescent Sports Medicine
- The Orthopedic Biomechanics Research Center
- The Motion Analysis Laboratory/Center for Human Performance

**The Center for Spinal Deformities** works with a very active clinical spine service under the supervision of Dr. Peter Newton. With the help of industry grants and par-

ticipation in the multi-center international spinal deformity Harms Study Group, the center has added four full-time research staff and one research nurse. The center's research has primarily focused on identifying the optimal treatment for adolescent idiopathic scoliosis (AIS) patients. Currently, all patients undergoing surgical correction of AIS are consented to participate in research and followed for a minimum of five years. The center collects pre-operative and post-operative clinical and radiographic data, and performs pulmonary function tests on each patient. A secure web-based database allows all sites to enter and query de-identified patient data, which includes digital x-rays and clinical photos. This system has proven to be successful in advancing knowledge of scoliosis treatment and help disseminate treatment information at international and national meetings, and in peer reviewed journals. The center has also launched similar prospective research studies for Scheuermann's kyphosis and scoliosis in patients with Cerebral Palsy, and plans to continue in vivo research and its work with the Orthopedic Biomechanics Research Center. It also serves as a site for a multi-center, NIH funded study investigating the efficacy of bracing versus watchful waiting in patients with adolescent idiopathic scoliosis.

**The Center for Orthopedic Outcomes** studies a variety of orthopedic treatments, which includes the Hip Research Center and Orthopedic Trauma Center. Three full-time research staff members work with orthopedic attendings, fellows, and residents to investigate clinical questions pertaining to hip disease, trauma, orthopedic treatment of neuromuscular disease, sports medicine and pediatric foot deformities. Most of the research in this center is retrospective in nature and may require patient follow-up to obtain the appropriate outcome data. Efforts are underway to establish prospective research studies within this center, particularly for patients with hip disease and sports injuries.

**The Orthopedic Biomechanics Research Center** (OBRC), founded in 1998 and led by Dr. Peter Newton under the direction of Diana Glaser, PhD, applies advanced engineering tools and methods to evaluate techniques and instrumentation used to correct orthopedic problems and deformities. The lab has received several grants to evaluate current spinal devices and a new tech-

nique for fusionless scoliosis surgery. These studies, along with research presentations and publications, have made the lab a world-recognized facility in this area of orthopedic research. The lab has also made significant progress toward understanding the biomechanical effects of various surgical techniques for stabilizing adolescent fractures of the humerus, femur and tibia, and in exploring the biomechanical effects of pediatric hip deformity.

These cumulative research efforts have been accomplished by pairing orthopedic surgeons and biomedical engineers with orthopedic residents and fellows. Engineering interns and medical students are also recruited to help with each project. This multi-layered approach has yielded significant success with prolific publications appearing in *Spine*, the *Journal of Pediatric Orthopaedics*, *Clinical Orthopaedics and Related Research*, the *American Journal of Sports Medicine*, the *Journal of Shoulder and Elbow Surgery*, *Medicine and Science in Sports and Exercise*, the *Journal of Foot and Ankle Surgery*, *Arthroscopy* and the *Journal of Applied Biomechanics*.

**The Motion Analysis Laboratory (MAL)** has been utilizing and developing technological resources for the advanced diagnosis and treatment of orthopedic problems since 1974. Led by Dr. Henry Chambers, the internationally recognized MAL specializes in the diagnosis and treatment of orthopedic dysfunction in cerebral palsy. The MAL uses modern computer technology and high-speed digital cameras to obtain detailed reports of how patients move while walking compared to age-related data of normal walking patterns. By studying the differences, an orthopedic surgeon can develop an individualized treatment plan, with recommendations for orthoses, physical therapy or surgery, if necessary.

**The Center for Human Performance (CHP)** was established by Arnel Aguinaldo, MA in 2001. Utilizing MAL technology, the center's main objectives are studying and providing feedback on athletic performance and injury prevention in such areas as pitching, golf swing, running, and archery for children, adults and athletes of all ages and levels of competition. The MAL and CHP continue to be at the forefront in the field of human motion study.

## AWARDS, HONORS AND PRESENTATIONS

### Scott J. Mubarak, MD

- Visiting professor, 3rd King Saud University Pediatric Orthopedic Symposium and Workshops. Riyadh, Saudi Arabia, March 23-25, 2010
- Salter I, II, III & IV medial malleolus fractures. Pediatric Orthopedic Society of North America Annual Meeting, Waikoloa, HI, May 4, 2010
- Presidential guest speaker, Hawaii: First Contact. Pediatric Orthopedic Society of North America Annual Meeting, Waikoloa, HI, May 6, 2010
- Invited speaker, Acute compartment syndromes. Chiba Children's Hospital, Chiba, Japan, May 25, 2010
- Osteotomies for foot deformities: Pes valgus and pes cavus. 83rd Annual Meeting of the Japanese Orthopedic Association, Tokyo, Japan, May 27, 2010
- Combined Conference of 6th Triennial Congress of Asia Pacific Orthopedic Association and 59th Annual Meeting of Taiwan Orthopedic Association, November 5-7, 2010
  - Compartment Syndromes
  - DDH Screening in Asian-Pacific Countries (symposium)
  - Osteotomies for Foot and Ankle Deformities: Planning and Technical Tips
  - Moderator: Trouble Case Symposium
- Invited faculty member, International Pediatric Orthopedic Symposium Annual Meeting, Orlando, FL, Dec. 4, 2010
  - Cavus Foot Reconstruction
  - Tarsal Coalitions: Resection Tips and Pitfalls
  - Complex Surgical Foot and Ankle Cases Panelist
  - Osteotomies for Ankle Deformities: Planning and Technical Tips
- American Academy of Orthopedic Surgeons Annual Meeting, San Diego, CA, February 16, 2011
  - Mid-term Outcomes of Patients Treated for Symptomatic Talocalcaneal Coalitions
  - Management of Pediatric Foot Deformity and Adult Sequelae of Pediatric Foot Deformity
  - Challenges of Practice Management in Pediatric Orthopedics

- European Pediatric Orthopedic Society Annual Meeting, Basel, Switzerland, April 6, 2011
  - Reliability of a New Radiographic Classification of Developmental Hip Dysplasia
  - Calcaneonavicular Coalitions: Resection Tips and Pitfalls
  - Classification and Treatment of Talocalcaneal Coalitions

### **Dennis R. Wenger, MD**

#### **Eponymous Invited International Professorships**

- 4th Annual N Balachandran Professorship in Orthopedic Surgery – University of Singapore, October 3-8, 2010. This named and funded professorship is designed to bring internationally recognized teaching methods into the Singapore University Orthopedic Training Program Curriculum. Dr. Wenger served for a full week in this capacity, participating in teaching sessions, clinical sessions, and O.R. sessions. This included delivering the N Balachandran Guest Lectureship entitled: Will Your Child Live to be 100? Children's Orthopedic Methods to Optimize Hip and Lower Limb Function

#### **Presentations at International Orthopedic Conferences**

- Invited speaker, Sociedad Mexicana de Ortopedia Pediatrica, Los Cabos, Mexico, multiple presentations, September 12-15, 2009
- The evolution of children's orthopedics in North America – Will scientific advances and cultural factors change our specialty? At the International Pediatric Orthopedic Think Tank, Hong Kong, October 13-16, 2009
- Advanced containment methods for perthes disease: triple acetabular osteotomy. Pre-Meeting Course: Legg-Calve-Perthes Disease – One Century After. European Pediatric Orthopedic Society, Zagreb, Croatia, April 7, 2010
- Invited speaker, The Dega/San Diego pelvic osteotomy, the Salter osteotomy, triple innominate osteotomy — Surgical techniques in pediatric orthopedics: The hip. Madrid, Spain, May 20-22, 2010
- Invited speaker, History of Legg-Perthes Disease, Advanced containment methods for the treatment of Perthes Disease. The 5th Triennial Congress of International Federation of the Pediatric Orthopedic Societies 2010, Seoul, Korea, September 8-11, 2010

- Presentations at North American Orthopedic Conferences: Paralytic dislocation of the hips—management strategy; Flat foot: Surgical strategies; Will your child live to be 100? Children's orthopedic methods to optimize hip and lower limb function; Current surgical options for Blount's Disease; Current management of tarsal coalitions. N Balachandran Professorship, Singapore, October 3-8, 2010
- Complex hip problems in adolescents. The International Pediatric Orthopedic Symposium, Orlando, FL, December 2-5, 2009
- Will your child live to be 100? Children's orthopedic method to optimize hip and lower limb function. AAOS Instructional Course Lecture, American Orthopedic Foot and Ankle Society, New Orleans, LA, March 13, 2010
- Invited lecturer, DDH in the walking age child: The North American perspective. Pediatric Orthopedic Society of North America Annual Meeting, Oahu, Hawaii, May 4-8, 2010
- Pelvic osteotomies—hands on: Advanced, Challenging hip cases: Perthes, SCFE and DDH, Femoral Acetabular Impingement. International Pediatric Orthopedic Symposium, Orlando, FL, December 1-4, 2010
- International perspective on DDH; Diagnosis and management through early adulthood, Ligamentum teres reattachment at an isocentric point: A porcine study with clinical implication, Acetabular retroversion in slipped capital femoral epiphysis, Perthes hip: 100 years later. AAOS Annual Meeting, San Diego, CA, February 16-19, 2011
- Limitations of EBM: The role of experience and expert opinion. POSNA One-Day Course, Montreal, May 11, 2011

### **Henry G. Chambers, MD**

- Gait analysis for dummies, the hip in cerebral palsy, patellofemoral problems in children and adolescents. Lynn Staheli Visiting Professorship, Seattle, WA, January 2010
- Children and sports; Participation of children with disabilities in sports, LT Staheli Pediatric Orthopedic Day for Primary Care Physicians, Seattle, WA, January 2010
- AAOS Annual Meeting: The operative management of pediatric upper extremity fractures. Fractures of the

**RESEARCH SUPPORT**

<b>Grant/Contract #</b>	<b>Total Direct Dollars/Duration of Grant</b>
n Vitro, Biomechanical Analysis of Upper Foundation Spine and Rib Anchors San Diego Spine Foundation (SDSF) (Glaser PI)	\$4,051 Oct. 2010-Oct. 2011
Validation of the EOS 3D Reconstruction Accuracy against CT EOS Imaging (Glaser PI)	\$20,839 Jan. 2011-June 2011
Real-Time Analysis of the Biomechanics and the Effectiveness of Fusionless Spinal Growth Modulation Devices Scoliosis Research Society (SRS) (Glaser PI)	\$25,000 Mar. 2011-Mar.2013
<b>Eric W. Edmonds, MD</b>	
Insall vs. MPFL Reconstructive Surgery for Recurrent Patella Instability UCSD (sub-award)/OREF	\$141,865 Jan. 2011-Dec. 2013
St. Giles Young Investigator Award: Bar Formation in Physeal Fractures: The Utility of Interpositional Fat Graft Using Laprine Model UCSD (sub-award)/POSNA funded	\$7,635 July 2010-June 2012
<b>Harish S. Hosalkar, MD</b>	
Orthopaedic Career Development Grant OREF	\$50,000 July 2010- June 2011
<b>Peter O. Newton, MD</b>	
Prospective Study of Motion Preservation Evaluation below Fusions of the Spine in Adolescent Idiopathic Scoliosis HSGF/DePuy Spine funded	\$54,625 Apr. 2009-Dec. 2011
Retrospective Study of Scoliosis Correction in Marfan Syndrome Patients HSGF/DePuy Spine funded	\$4,000 Jan. 2010- Dec. 2010
Growth Plate and Intervertebral Cellular Responses to Spinal Growth Modulation with Asymmetric Tether: A pilot Study in an Immature Porcine Model Scoliosis Research Society (SRS)	\$10,000 Mar. 2010- Mar. 2011
10 year follow ups: Prospective Study of Motion Preservation Evaluation below Fusions of the Spine in Adolescent Idiopathic Scoliosis HSGF/SRS	\$9,586 Apr. 2010- Sept. 2012
Three-Dimensional Analysis of the Deformation and Corrective Forces in the Spinal Rods for Scoliosis Correction Pediatric Orthopaedic Society of North America (POSNA)	\$25,000 Mar. 2010- May 2011

Shoulder Girdle and Humerus, New Orleans, LA, March 2010

- What's new in cerebral palsy. *Advances in the Practice of Pediatrics*, San Diego 2010, San Diego, CA, March 2010
- Faculty Sports Medicine Symposium Communication Symposium, Parent-Professional Partnership (with Jill Chambers). Pediatric Orthopedic Society of North America, Waikoloa, HI, May 2010
- Transition and lifespan care of adolescents and adults with cerebral palsy. Town Hall Meeting, Developmental Disability Nursing Association and American Academy of Developmental Medicine and Dentistry, Reno, NV, May 2010
- How to recognize and diagnose a neuromuscular disorder, treatment of OCD of the knee, lower extremity cerebral palsy management, Haiti: Responding to a natural disaster. Australian Pediatric Orthopedic Society, Pelican Bay, Queensland, Australia, September 2010
- It's a small world after all: Healthcare for children with disabilities in developing regions (with Scott Hoffinger, MD). American Academy for Cerebral Palsy and Developmental Medicine, Washington, DC, September 2010

### **Peter O. Newton, MD**

- President-Elect of the Pediatric Orthopedic Society of North America
- American Academy of Orthopaedic Surgeons Annual Meeting, New Orleans, LA, March 9-13, 2010
  - Surgical site infection in spinal surgery: The newest never event
  - Disc health preservation after six months of spinal-growth modulation: Expanding the treatment options for fusionless spinal deformity correction - Left thoracic curves are not a mirror image of right thoracic idiopathic curves - a new indication for Ponte releases in adolescent idiopathic scoliosis: restoring thoracic kyphosis. Does maximizing curve correction of Lenke 1 curves in AIS risk secondary decompensation - Morbidity and mortality data research is a unique contribution to the membership of the SRS – Scoliosis Research Society
  - Body image in idiopathic scoliosis: Validation of the body image disturbance questionnaire
  - Scheuermann's Kyphosis: Clinical presentation and impact on quality of life

- The Surgeon learning curve for closed reduction and percutaneous pinning of type III supracondylar humerus fractures in children

- Cobalt chromium spinal rods: How do they stack up?  
- Intra-capsular pressures in young porcine hip: Does position and volume matter?

- How displaced are "non-displaced" medial epicondyle humerus fractures? Results of a 3D CT analysis

- Unfused segmental motion increases with a more distal fusion: a set up for disc degeneration

- Does maximizing curve correction of Lenke 1 curves in AIS risk secondary decompensation?

- Long-term follow-up of repaired discoid menisci in children and adolescents

- Six months of spinal growth modulation: Is the disc still "normal"?

- Comparison by motion analysis of anterior cruciate ligament reconstruction using a patellar tendon vs. hamstring tendon autograft

### **Burt Yaszay, MD**

- Moderator, Free papers 11-16, 3rd International Congress on Early Onset Scoliosis. Istanbul, Turkey, November 20-21, 2009
- Myth vs truth: VEPTRs can only be used for chest wall problems. 3rd International Congress on Early Onset Scoliosis, Istanbul, Turkey, November 20-21, 2009
- Guest Speaker, Maximizing three-dimensional correction in AIS with uniplanar screws and direct vertebral body rotation techniques. 44th Annual Meeting of the Japanese Scoliosis Society, Sapporo, Japan October 27-28, 2010
- Moderator, Case discussions. 3rd International Congress on Early Onset Scoliosis. Istanbul, Turkey, November 20-21, 2009
- Grand Rounds, New trends in the treatment of adolescent idiopathic scoliosis. Department of Orthopaedics, SUNY Downstate Medical Center, Brooklyn, NY, September 2010
- Grand Rounds, Management of adolescent idiopathic scoliosis. Department of Orthopaedics, St. Lukes Roosevelt Hospital, New York, NY, September 2010
- Faculty, Depuy Spine Spinal Deformity Tutorial, San Diego, CA, April 15-6, 2010

**RESEARCH SUPPORT**

Grant/Contract #	Total Direct Dollars/Duration of Grant
Bracing in Adolescent Idiopathic Scoliosis (BrAIST) University of Iowa (NIH SubAward)	\$19,278 Sept. 2010-Aug. 2011
Prospective Study of Scheuermann's Kyphosis HSGF/DePuy, Spine funded	\$16,580 Nov. 2010-Dec. 2012
Scoliosis Surgery Outcomes Database Registry: A Prospective, Multi-center Database Registry of the DePuy Spine Harms Study Group (AIS) HSGF/DePuy, Spine funded	\$139,614 Nov. 2010-Dec. 2012
Prospective Study of Cerebral Palsy Scoliosis HSGF/DePuy, Spine funded	\$79,710 Nov. 2010-Dec. 2013
3D Visualization of Vertebral Growth Cartilage and Disc; the Effects of Growth Modulation Scoliosis Research Society (SRS)	\$9,987 Mar. 2011-Mar. 2012

- Invited Speaker, Early Onset scoliosis. National Association of Orthopedic Nursing, San Diego, CA, February 2011

**Eric W. Edmonds, MD**

- St. Giles Young Investigator Award, Pediatric Orthopaedic Society of North America 2010
- POSNA Biomet South American Traveling Fellowship 2011
- Children with anterior shoulder instability: Do not underestimate the extent of labral pathology. 2011 Annual Meeting of the Pediatric Orthopaedic Society of North America in Montreal, Quebec, Canada
- Outcomes of extra-articular, intra-epiphyseal drilling for osteochondritis dissecans of the knee. (Special Emphasis Poster) The 123th Annual Meeting of the American Orthopaedic Association in San Diego, CA, 2010
- How displaced are “non-displaced” medial epicondyle humerus fractures in children? Results of a 3D CT analysis. 2010 Annual Meeting of the Pediatric Orthopaedic Society of North America in Waikoloa, HI
- Bi-monthly articles, Playing Safe: Topics on Sports Injuries, in the San Diego Union Tribune, 2011

**Harish S. Hosalkar, MD**

- Stanley Chung Pediatric Orthopedic Research Award, 2009. For excellence in pediatric orthopedic research, from Children’s Hospital of Philadelphia
- Keynote address on fracture management in adolescents: Where do we stand today? Indian Medical Association of Southern California, 2009
- Orthopedic Research and Education Foundation Career Development Award, 2010: \$50,000 AWARD
- Best Poster Award. Pediatric Orthopedic Society of North America Boston, MA, 2009
- Conducted Advanced Hip Symposium. POSICON 2010, Hyderabad, India, 2010
- Bernese Hip Symposium, Faculty for Advanced Hip Symposium, Bern, Switzerland, 2010
- American Academy of Orthopedic Surgeons, 7 studies presented. New Orleans, LA, 2010
- Faculty for Hip Symposium: Update on hip impingement in children and adolescents. Canadian Orthopedic Association Hip Symposium, St. John’s, Newfoundland, 2011
- Orthopedic Research Society, 4 studies presented. Long Beach, CA, 2011

- American Academy of Orthopedic Surgeons, 6 studies presented. San Diego, CA, 2011
- Radiographic parameters around the hip and pelvis in children: How do they evolve? Western Orthopedic Association Meeting, Monterey, CA, 2010

### Andrew T. Pennock, MD

- Does femoral anteversion play a role in the pathomechanics and subsequent surgical treatment of femoroacetabular impingement? International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine (ISAKOS), Rio de Janeiro, Brazil
- Autograft versus allograft anterior cruciate ligament reconstruction in adolescents. AANA Annual Meeting, San Francisco, CA
- The influence of arm and shoulder position on the belly-press, lift-off and bear-hug tests. American Academy of Orthopaedic Surgeons (AAOS) Annual Meeting, San Diego, CA
- Arthroscopic ligamentum teres reconstruction: Technique and early outcomes. International Society for Hip Arthroscopy (ISHA) Annual Scientific Meeting, Cancun, Mexico
- Instructor, AANA Advanced Hip Arthroscopy Course, Chicago, IL, March 2011
- Promoted to Editorial Board for Arthroscopy. *The Journal of Arthroscopic and Related Surgery*
- United States Ski Team Physician responsible for multiple World Cups in Europe
- Consulting Orthopaedic Surgeon United States Olympic Training Center in Chula Vista, CA

Baldwin K, Pandya N, Wolfgruber H, Drummond D, **Hosalkar H**. Femur fractures in the pediatric population: abuse or accidental trauma? *Clin Orthop Relat Res*, 469(3):798-804, 2011.

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Bittersohl B, **Hosalkar H**, Hughes T, Kim Y, Werlen S, Siebenrock K, Mamisch T. Feasibility of T2 mapping for the evaluation of hip joint cartilage at 1.5T using a three-dimensional (3D), gradient-echo (GRE) sequence: a prospective study. *Magn Reson Med*, 62(4):896-901, 2009.

Bittersohl B, **Hosalkar H**, Kim Y, Werlen S, Trattinig S, Siebenrock K, Mamisch T. T1 assessment of hip joint cartilage following intra-articular gadolinium injection: A pilot study. *Magnetic Resonance in Medicine: Official Journal of the Society of Magnetic Resonance in Medicine*, 64(4):1200-7, 2010.

Bittersohl B, **Hosalkar H**, Werlen S, Trattinig S, Siebenrock K, Mamisch T. Intravenous versus intra-articular delayed gadolinium-enhanced magnetic resonance imaging in the hip joint: A comparative analysis. *Investigative Radiology*, 45(9):538-42, 2010.

Bittersohl B, **Hosalkar H**, Werlen S, Trattinig S, Siebenrock K, Mamisch T. dGEMRIC and subsequent

## RECENT PUBLICATIONS

Aguinaldo A, **Chambers H**. Correlation of throwing mechanics with elbow valgus load in adult baseball pitchers. *Am J Sports Med*, 37(10):2043-8, 2009.

Baldwin K, **Hosalkar H**, Donegan D, Rendon N, Ramsey M, Keenan M. Surgical resection of heterotopic bone about the elbow: An institutional experience with traumatic and neurologic etiologies. *J Hand Surg Am*, 36(5):798-803, 2011.

- T1 mapping of the hip at 1.5 Tesla: Normative data on zonal and radial distribution in asymptomatic volunteers. *J Magn Reson Imaging*, 34(1):101-6, 2011.
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- Chambers H**. Osteochondral autologous transplantation was more effective than microfracture for osteochondritis dissecans in children younger than eighteen years. *The Journal of Bone and Joint Surgery, American Volume* 92(10):1998, 2010.
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- Chambers H**, Shea K, Anderson A, Brunelle T, Carey J, Ganley T, Paterno M, Weiss J, Sanders J, Watters W 3rd, Goldberg M, Keith M, Turkelson C, Wies J, Raymond L, Boyer K, Hitchcock K, Anderson S, Sluka P, Boone C, Patel N, American Academy of Orthopedic Surgeons. Diagnosis and treatment of osteochondritis dissecans. *J Am Acad Orthop Surg*, 19(5):297-306, 2011.
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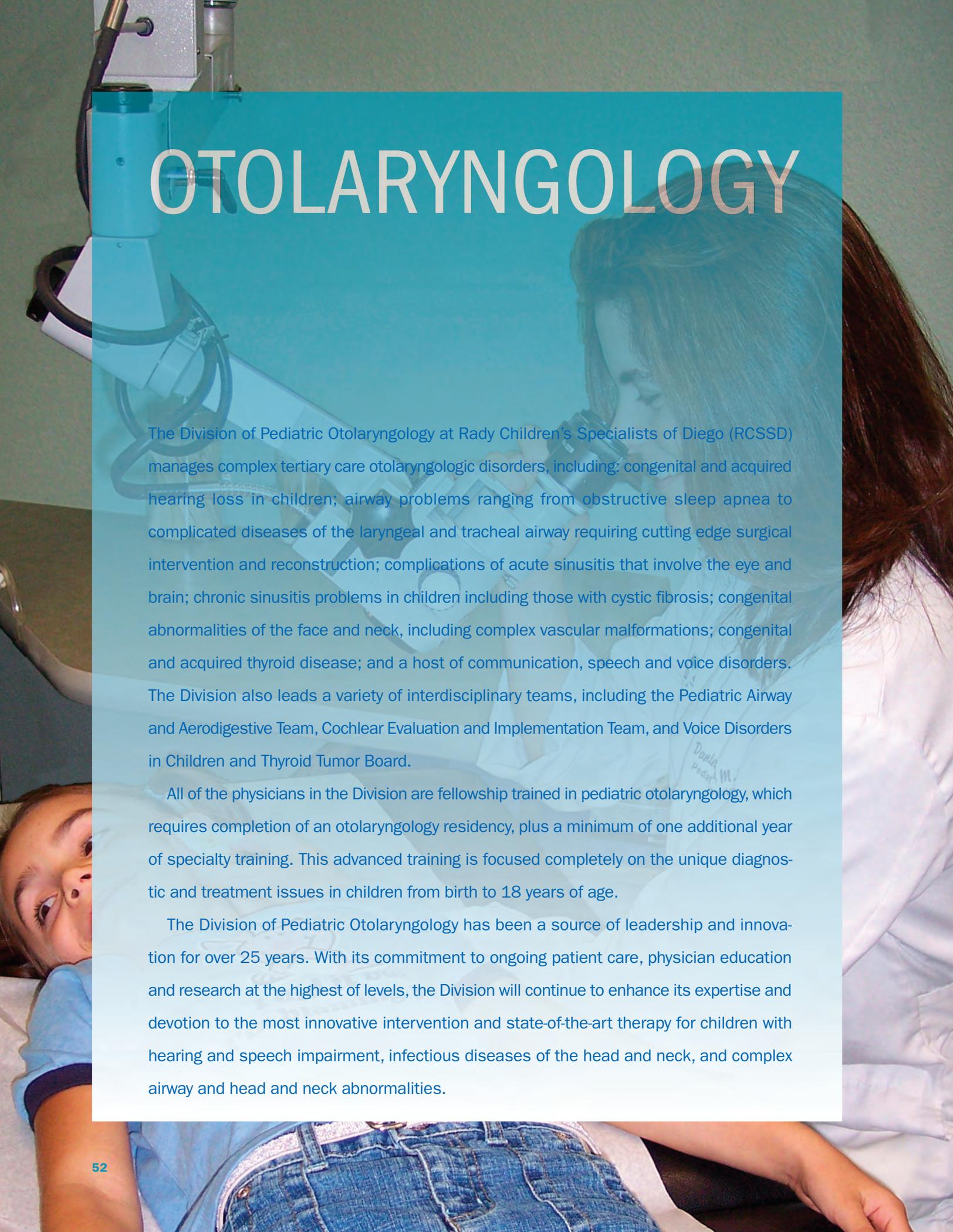
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# OTOLARYNGOLOGY



The Division of Pediatric Otolaryngology at Rady Children's Specialists of Diego (RCSSD) manages complex tertiary care otolaryngologic disorders, including: congenital and acquired hearing loss in children; airway problems ranging from obstructive sleep apnea to complicated diseases of the laryngeal and tracheal airway requiring cutting edge surgical intervention and reconstruction; complications of acute sinusitis that involve the eye and brain; chronic sinusitis problems in children including those with cystic fibrosis; congenital abnormalities of the face and neck, including complex vascular malformations; congenital and acquired thyroid disease; and a host of communication, speech and voice disorders. The Division also leads a variety of interdisciplinary teams, including the Pediatric Airway and Aerodigestive Team, Cochlear Evaluation and Implementation Team, and Voice Disorders in Children and Thyroid Tumor Board.

All of the physicians in the Division are fellowship trained in pediatric otolaryngology, which requires completion of an otolaryngology residency, plus a minimum of one additional year of specialty training. This advanced training is focused completely on the unique diagnostic and treatment issues in children from birth to 18 years of age.

The Division of Pediatric Otolaryngology has been a source of leadership and innovation for over 25 years. With its commitment to ongoing patient care, physician education and research at the highest of levels, the Division will continue to enhance its expertise and devotion to the most innovative intervention and state-of-the-art therapy for children with hearing and speech impairment, infectious diseases of the head and neck, and complex airway and head and neck abnormalities.



*Left to right: Anthony Magit, Daniela Carvalho, Wen Jiang, Shelby Lewin, Seth Pransky, Marcella Bothwell*

## FACULTY/STAFF

**Seth M. Pransky, MD**, Director, Division of Pediatric Otolaryngology; Director, Satellite Services RCHSD; Clinical Professor of Surgery, UCSD

**Marcella Bothwell, MD**, Director, Pediatric Airway and Aerodigestive Team, RCHSD; Associate Clinical Professor of Surgery, UCSD

**Daniela S. Carvalho, MD**, *Section Chief*, Otolaryngology-RCHSD; Director, Hearing Program; Director, Pediatric Otolaryngology Fellowship Program; Assistant Clinical Professor of Surgery, UCSD

**Wen Jiang, MD**, Director, Pediatric Thyroid Clinic; Co-Director Speech and Voice Clinic; Assistant Clinical Professor of Surgery, UCSD

**Donald B. Kearns, MD**, *Surgeon in Chief*, RCSSD; Assistant Chief Medical Officer-RCHSD; Clinical Professor of Surgery, UCSD

**Shelby Leuin, MD**, Director, ENT Resident Training Program; Co-Director Speech and Voice Clinic; Assistant Clinical Professor of Surgery, UCSD

**Anthony Magit, MD**, *Chief of Staff*, RCHSD; Director, Institutional Review Board-RCHSD; Clinical Professor of Surgery, UCSD

**Denise Lago, PAC**

## CLINICAL ACTIVITIES

The Division's physicians are responsible for covering the Emergency Department at RCHSD and running the Consultation Service for patients admitted to the hospital with ear, nose, throat, airway and neck abnormalities. The bulk of clinical practice is carried out on the campus of RCHSD combined with daily patient activity at satellite locations in Encinitas, Escondido Murrieta, and Oceanside. The group has also provided care at a satellite clinic in El Centro since 1991. In addition, consultative services are provided to multiple regional Neonatal Intensive Care facilities including Sharp Mary Birch, Scripps La Jolla, Scripps Encinitas and UCSD Medical Center.

Patients requiring operative intervention or specialized testing are brought to RCHSD. In 2009-2011, the Division conducted over 28,000 patient visits and carried out approximately 9500 operative procedures each year. Procedures included:

- Placing ear tubes, removing tonsils and adenoids, restoring hearing with ossicular reconstruction, and the state of the art cochlear implant and Bone Anchored Hearing Aid program
- Diagnostic and therapeutic endoscopic airway procedures from neonates to adolescents and open surgical management of complex airway diseases

## Major Goals and Plans

Recruitment of a new physician

Expand research

- Increase fellow research initiatives

Continue to:

- Expand our clinical service
- Be recognized as the most responsive service for clinical care
- Enhance efficiency of office management through innovative approaches

Increase cochlear implantations (bilateral procedures)

Expand role of PAAT:

- Guideline development
- Assure safe medical practice for difficult airway patients (red flag charts)
- Develop new techniques for Extra Esophageal Reflux evaluation
- Regional marketing of the team

Expand role of voice and speech clinic

- Endoscopic sinus surgery for children with chronic sinusitis and complications of acute sinusitis; management of various intranasal abnormalities including turbinate malformations and septal deviations; management of the nasal and sinus manifestations of cystic fibrosis
- Surgical correction of a variety of congenital head and neck malformations and management of both benign and malignant head and neck neoplasms with a focus on thyroid abnormalities and lymphatic malformations

The Division's outstanding reputation and expertise in problems such as difficult airway abnormalities, unusual and challenging lymphatic malformations, hearing restoration and recurrent respiratory papillomatosis attracts patients from California, Nevada, Arizona, Mexico and the Pacific Rim countries for specialized pediatric ENT care.

### Marcella Bothwell, MD

Marcella joined our department in 2006. She comes from the University of Missouri, where she was an Assistant Professor for 6 years and was recently promoted to Clinical Professor, Department of Surgery UCSD. At RCHSD she developed and directs the Pediatric Airway and

Aerodigestive Team (PAAT), a multidisciplinary group which sees about 50 new patients each year with complex airway, swallowing and feeding problems. In addition Marcella takes an active role in the Down Syndrome Center of RCHSD, helping to manage the multiple head and neck problems present in these children. Dr. Bothwell is also quite active in the regional and national ENT community where she is President of the San Diego Academy of Otolaryngology and is the Secretary and member of the Board of Directors of the California Otolaryngology Society. She is also the national Chair for the ENT PAC and travels to Washington DC at least 2 times per year to lobby Congress about concerns in patient care. Finally Marcella has made three trips to Vietnam with REI International for a medical/surgical mission trip.

### Daniela Carvalho, MD

Daniela joined our department in 2003, having completed a two year fellowship with our group from 1999-2001. She is currently the Section Chief for Otolaryngology at RCHSD. Daniela's clinical focus and area of interest is hearing in children including sensorineural, conductive and

genetic hearing loss. As the director of the Hearing Program and lead surgeon for the RCHSD Cochlear Implant team, Daniela assesses hearing loss patients and guides the Team in management of approximately 300 cochlear implant patients. This past year she successfully performed 40 cochlear implants. She continues to bring to our pediatric hearing impaired patients state-of-the-art innovations in the area of implantable hearing devices, including the BAHA, Ponto-pro and Sophono devices. Daniela has taken over as Director of our Pediatric Otolaryngology Fellowship program and was responsible for successfully having our program accredited by the ACGME. She is involved in multiple international endeavors including ongoing lectures in her native Brazil thru the Brazilian National ENT Association and her role as international liaison for SENTAC.

#### **Wen Jiang, MD**

Wen joined our department in 2007. She came with a strong training background in head and neck oncology from Washington University and has a special interest in thyroid and other head and neck neoplasms in children. This background has enabled Wen to build her head and neck oncology practice in which she has managed patients with increasingly complex thyroid neoplasms. In March, 2011, she was awarded a physician development grant by RCHSF and attended an International conference on the controversies and management of thyroid neoplasm with an emphasis on minimally invasive techniques. Wen continues to build the RCHSD interdisciplinary thyroid program working closely with Pediatric Endocrinology, Radiology and Pathology to provide a tumor board that will ensure state of the art care for children with thyroid malignancies. In addition, Wen specializes in voice disorders in children and currently co-directs the Speech and Voice Endoscopy Clinic, a multi-disciplinary voice and speech team working closely with the Speech Pathology department at RCHSD. This team provides comprehensive service to children with speech related disorders such as hypernasality and/or velopharyngeal incompetence, and other voice disorders. Wen also leads our IT program and has been instrumental in generating a smooth transition for our group to electronic medical records.

#### **Donald B. Kearns, MD**

Donald has practiced Pediatric Otolaryngology at RCHSD for over 20 years. He completed the Master of Medical Management program at the Marshall School of Business at the University of Southern California in 2008. His primary interest is in administrative medicine and he has been the Director of Surgical Services for RCHSD for the last twelve years and the Director of Inpatient Services for the last five years. He currently serves as the Interim Surgeon in Chief for RCSSD and Assistant Chief Medical Officer for RCHSD.

#### **Shelby Leuin, MD**

Shelby is the newest addition to the Pediatric Otolaryngology group at RCHSD joining the practice in January 2011. She did her residency training at the Massachusetts Eye and Ear Institute and her pediatric otolaryngology training at Denver Children's Hospital. Her clinical interests focus on midfacial abnormalities including congenital and acquired nasal deformities and cleft palate abnormalities as well as airway reconstruction. She adds a unique skill set to our group with her training and interest in rhinoplasty. With this background Shelby has become increasingly involved with the Cleft Palate and Craniofacial clinics and is a co-director of the Speech and Voice Endoscopy Clinic. She is working with Jane Burns, M.D. to begin a study evaluating the incidence and laryngeal findings associated with hoarseness in children with Kawasaki disease. Shelby is also a member of the Pediatric Airway and Aerodigestive Team. Finally, she has a vested interest in the training of residents and fellows and is currently the Director of the Pediatric Otolaryngology residency training program.

#### **Anthony E. Magit, MD**

Anthony has been a part of our group for 19 years. He has served as the chief of staff of RCHSD and is also the Chairman of the Institutional Review Board of RCHSD. Anthony's ongoing areas of clinical and research interest include lymphatic malformations, cystic fibrosis and obstructive sleep disorders in infants and children. He has collaborated his research activities in cystic fibrosis with the Pediatric Pulmonary division and has been instrumental in developing a novel approach to treating lymphatic malfor-



mations maintaining a data base of more than 120 treated patients from the Southwestern region of the US. Superimposed on a full clinical practice and his administrative duties, Anthony is the Secretary of the Society of Ear, Nose and Throat Advances in Children and is obtaining a Masters in Public Health from Johns Hopkins University. He is a member of the Vascular Lesions Committee of the American Society for Pediatric Otolaryngology.

#### **Seth M. Pransky, MD**

Seth began practice at RCHSD in 1985 and became the Division Director for Pediatric Otolaryngology in 1997. At RCHSD he is the Director of Satellite Services and chairs both the Clinical Practice committee and Clinical Operations Committee of the RCSSD. His ongoing areas of clinical interest include issues related to airway diseases including recurrent respiratory papillomatosis and subglottic hemangioma, and operative management of nasal and sinus disease in children. He lectures extensively through-

out the United States and internationally on these topics and in 2008 received the Gabriel F. Tucker Award from the American Laryngological Association for outstanding contributions to Pediatric Laryngology. In addition to his local responsibilities, Seth has been involved nationally with board positions in the American Society of Pediatric Otolaryngology and the American Academy of Pediatrics ENT Section and was recently the President of the Society of Ear, Nose and Throat Advances in Children. In addition he was just awarded the prestigious Ray Skoglund Excellence in Teaching Award for 2011 from RCHSD.

## RESEARCH ACTIVITIES

For the past 25 years, the Division has been recognized around the world for innovative research and advancements in managing a variety of pediatric airway abnormal-

ities. Procedures include corrective open laryngotracheal reconstruction and therapeutic endoscopic management of airway abnormalities using innovative lasers, debrid-ers and injectable medications. Current research projects involve all aspects of pediatric otolaryngology including cochlear implant issues, head trauma, head and neck tumor management in children, lymphatic malformations treatment, acute and chronic sinusitis research and out-comes of sinus surgery, and more unusual problems such as lack of sense of smell in children, hoarseness in patients with Kawasaki's Disease and resolution of recurrent fever after tonsillectomy in patients with Periodic Fever, Aphthous stomatitis, Pharyngitis, Adenitis (PFAPA) Syndrome. The active research projects are:

- Oral Language Capabilities of Monolingual and Bilingual Spanish and English Speaking Children with Cochlear Implants
- Epidemiology of skull base fractures in San Diego County
- Management of lymphatic malformations: A database protocol
- Multi-Institutional study of Picibanil for Lymphatic Malformations
- Systematic Review of sinus surgery in patients with Cystic Fibrosis
- Anosmia in the pediatric population
- Salivary gland tumors in the pediatric populations
- Hoarseness in Kawasaki Patients
- Cellular Immunity in Periodic Fever, Aphthous stomatitis, Pharyngitis, Adenitis (PFAPA) Syndrome
- Ten year retrospective review of orbital complications of acute sinusitis at RCHSD
- Pharyngeal probe for Extra esophageal reflux

## TEACHING ACTIVITIES

Superimposed on clinical care is the Division's dedication to education. Currently we have three fellows in our clinical Pediatric Otolaryngology fellowship program. Since 1990, we have graduated 24 fully-trained pediatric oto-laryngologists who have gone on to productive careers in academic institutions throughout the United States. In

addition, the Division is responsible for educating ENT residents from the UCSD and the Naval Medical Center San Diego programs in pediatric otolaryngology. Pediatric residents, family medicine residents and medical students also rotate through the clinic and receive didactic lectures from our staff as part of their pediatric specialty educa-tion program. The Division actively participates in com-munity outreach programs through involvement with the health professionals mentor program at UCSD and through its involvement with the otology and hearing clinic for San Diego City Schools. Physicians from around the world enjoy the opportunity for observational preceptorships with physicians from Brazil, Peru, Mexico, Chile, Vietnam and Iraq having spent time at RCHSD in recent years.

Throughout the year, members of the Division give Grand Rounds lectures and CME programs to commu-nity-based physicians in multiple specialties to ensure state-of-the-art practice for primary care physicians.

On a national level, the Division provides extensive update meetings drawing primary care physicians from around the country to review management issues for a wide range of pediatric ENT problems. In addition, members of the department give Instructional Courses each year at the American Academy of Otolaryngology Annual and at the American Academy of Pediatrics national meetings.

In 1992, the Division created International Endoscopy Days at RCHSD, a world class meeting for pediatric oto-laryngologists from around the world. The otolaryngol-ogists participate in a day of live operative endoscopy fol-lowed by lectures, panels and open discussion on cutting-edge management of pediatric airway abnormal-ities. In October 2009 over 75 physicians from around the world attended the 14th International Endoscopy day at RCHSD. Four very challenging live airway endoscopy cases were performed by our group, observed by the atten-dees and spirited discussion, debate and audience interac-tion followed. Once again comments from the attendees such as "The best conference all year" were heard at the end of the meeting. The next Endoscopy Days conference will be held April 2012.

## THE COCHLEAR IMPLANT PROGRAM AT RCHSD

The Cochlear Implant (CI) team at RCHSD began in 2004 under the directorship of Daniela Carvalho, MD. This program has been critical in providing hearing restoration for children with profound hearing loss that do not benefit from hearing aids. This mode of hearing rehabilitation permits these children to enter into the mainstream community and achieve their full educational and communicative potential. Our multidisciplinary team includes hearing and speech specialists, an auditory verbal therapist, developmental psychologists and social workers from RCHSD. The program has grown steadily and there are more than 300 CI patients followed by our group and has been a dramatic success as shown by the growth and accomplishment of the team listed below.

## CI TEAM ACCOMPLISHMENTS

### CI Growth

- 2004: 10 CI surgeries/year  
2010: 52 CI surgeries/year
- 2007: 238 CI's programmed/year  
2011: 420 CI's programmed/year
- 2004: <100 patients  
2011: >300 patients

### Aural Rehabilitation Services/Providers

- 2004: 2 Speech Language pathologists
- 2005: 3 Speech Language pathologists
- 2008: 4 Speech Language pathologists
- 2010: 7 Speech Language pathologists
- 2011: 9 Speech Language pathologists, including auditory verbal therapist

### Audiology Services/Providers

- 2004: 1 Cochlear Implant audiologist

- 2005: 3 Cochlear Implant audiologists
- 2009: 4 Cochlear Implant audiologists
- 2011: 5 Cochlear Implant audiologists, one of whom is bilingual and one who has a cochlear implant

## PRESENTATIONS/ RESEARCH

- SENTAC 2005: Poster—Unresponsiveness to bilateral cochlear implantation on an otherwise healthy deaf child
- ASPO 2007: Poster—Possible hormonal-induced auditory symptoms in pediatric cochlear implant patients
- International Pediatric Cochlear Implant Meeting 2007: Poster—How do electrical stapedial reflexes compare with neural response telemetry?
- International Pediatric Cochlear Implant Meeting 2007: Poster—Comparison of pediatric cochlear implant patients from a developed and a developing country
- International Pediatric Cochlear Implant Meeting 2008: Poster—Routine assessment indicates appropriate hearing aid benefit: Can we do better?
- International Pediatric Cochlear Implant Meeting 2009: Poster—Bimodal-ism: Does frequency transposition technology have a role?
- ASPO 2009: Poster—The fine line for indication of hearing aids versus cochlear implants: Can we do better?
- AAA 2010: Poster—Distortions in pubescent cochlear implant patients: Real or phenomenon?

## COMMUNITY/ FAMILY OUTREACH

- Joy of sound
- Parent workshops  
2009: 4 parent workshops  
2010: 3 parent workshops
- Teen group
- Spanish toddler group

- 2009: Cochlear implant team logo created
- 2009: cochlear implant program brochure
- 2010: Cochlear implant video created

## COMMUNITY EDUCATION AND TRAINING

- Speech Language Pathology Mentor Program: 3-4x/year
- Educational site visits, 2x/year: Deaf and hard of hearing center based programs
  - Lafayette Elementary
  - Whitman Elementary
  - Reidy Creek Elementary
  - Davila Day School
  - Magnolia Elementary
- February 2008: Educators Workshop—Connecting care for children with cochlear implants: From the clinic to the classroom
- 2009: RCHSD Workshop—Improving early identification of hearing loss
- May 2011: El Centro Workshop—Cochlear implants and outcomes
- August 2011: El Centro Outreach—Best practices in cochlear implants

## COMMUNITY PHILANTHROPIC SUPPORT

- 2010 Auxiliary—Fuerte Hills Unit Sweet Charity Event: \$36,395 to support comprehensive developmental evaluations, multidisciplinary case conferences, post implant therapies (AVT), and speech and language evaluations
- June 2010, \$500,000.00 gift pledge from Shirley and Sam Richter to support the Cochlear Implant Program

## AWARDS, HONORS AND PRESENTATIONS

### Marcella Bothwell, MD

- 2011 National Practitioner Excellence Award from Board of Governors American Academy of Otolaryngology
- Physician Development Award, Rady Children's Foundation, 2010
- Consumer's Research Council, America's Top Physicians 2009, 2010

### National/Regional Society Activities

- San Diego Academy of Otolaryngology HNS—President
- California Otolaryngology Society—Secretary and Board of Directors
- American Academy of Otolaryngology—Board of Governors ENTPAC Committee Chair

### Rady Children's Hospital-San Diego

- Pediatric Airway and Aerodigestive Team, Chair, RCHSD
- Indications and Techniques for Pediatric Tracheostomy. Tracheostomy Day, RCHSD, San Diego, CA, August 2009

### Television, Radio and Newspaper

- Choking and Local Child's Death, San Diego NBC News, August, 2011
- Choking and Children, San Diego KJZZ News, February 22-23, 2010
- Bucky Balls and Ingestion Risk, San Diego CW News, Spring 2011
- Button Battery Ingestion Risk, San Diego Telemundo News, 2010

### Daniela Carvalho, MD

- Best Doctors in America 2009, 2011
- RCHSD Best to Listen To Award 2009
- San Diego Super Doctors, 2011
- Second place, Clinical category, for the Poster: Survey of thyroglossal duct cyst in a subspecialty referral practice. 24th Annual ASPO (American Society of Pediatric Otolaryngology) Meeting, Seattle, WA, May 2009

National/International Society Activities

- American Academy of Otolaryngology Head and Neck Surgery Member
- Implantable Hearing Aid Devices Committee, 2009-2012
- Brazilian Association of Otolaryngology, Head-Neck-Facial Surgery
- Member: International Committee, 2009-2010
- Member: Educational Committee, 2009-2010
- Society for Ear, Nose and Throat Advances in Children
- Member: Liaison Committee, 2009-2010
- Chairperson, Liaison Committee, 2010-2012
- International Working Group on Endoscopic Ear Surgery
- Corresponding member, 2010

Rady Children's Hospital-San Diego

- Section Chief of Otolaryngology, 2009-2012

Rady Children's Specialists of San Diego,

A Medical Foundation

- Compensation Committee, 2009-2010

Children's Specialists San Diego

- Contracts Committee
- Physician Retention Committee

Community

JCC Nierman Preschool Health & Safety Committee (2009-2010)

Scientific Presentations

- Broderick L, Page N, Carvalho D, Magit A, Jiang W, Simon L, Bothwell M, Kearns D, Pransky S, Hoffman H. Cellular Immunity in Periodic Fever, Aphthous stomatitis, Pharyngitis, Adenitis (PFAPA) Syndrome. The Federation of Clinical Immunology Societies, Boston, MA, June 2010
- Pellman L, Carvalho D. Pediatric caudal septal deviation and the Guillen suture technique: Does it provide better results? Society of Ear, Nose and Throat Advances in Children 38th Annual Meeting, Cincinnati, OH, December 2010
- Topp S, Donaldson C, Jiang W, Carvalho D. Radiation exposure in pediatric cystic fibrosis patients with Chronic Sinonasal Disease: A 10-year review. American

Society of Pediatric Otolaryngology 26th Annual Meeting, Chicago, CA, May 2011

Poster Presentations

- Cerebral magnetic resonance imaging and white matter changes in pediatric cochlear implant recipient. Society for Ear, Nose and Throat Advances in Children 37th Annual Meeting, Salt Lake City, UT, December 2009
- Bilateral severe inner ear abnormalities in profoundly deaf non-twin siblings. Society for Ear, Nose and Throat Advances in Children 37th Annual Meeting, Salt Lake City, UT, December 2009
- Distal renal tubular acidosis and sensorineural hearing loss: A case report. Society for Ear, Nose and Throat Advances in Children 37th Annual Meeting, Salt Lake City, UT, December 2009
- Individualized treatment of lateral sinus thrombosis-Is mastoidectomy necessary? American Society of Pediatric Otolaryngology 25th Annual Meeting, Las Vegas, NV, May 2010
- High-riding jugular bulb resulting in conductive hearing loss. Society for Ear, Nose and Throat Advances in Children 38th Annual Meeting, Cincinnati, OH, December, 2010

Invited Lectures

International:

- Sinusitis en niños: Cirugía endoscópica ¿Si o no? (Sinusitis in Children: Endoscopic surgery, yes or no?). XVI Congreso Estatal de Pediatría, XIX Jornadas Pediátricas del Colegio de Pediatras Capitulo Ensenada y Primer Encuentro Internacional de Pediatría, Ensenada, Mexico, June 27 2009
- Atualização em otorinopediatria (Update on pediatric otolaryngology). International Grand Rounds of the Otolaryngology, Head and Neck Surgery department, UNICAMP (State University of Campinas), Campinas, Brazil, July 2, 2010
- International Guest Faculty of the 40th Brazilian Congress of Otorhinolaryngology and Cervico-Facial Surgery, Natal, Brazil, November 23, 2010
- Síndrome de Down e otorrinolaringologia (Down Syndrome and otolaryngology)

- Síndromes genéticas em otorrinolaringologia (Genetic syndromes in otolaryngology)
  - Otologia pediátrica (Pediatric otology)
  - Avanços em estridor na infância (Advances in stridor)
- International Guest Faculty of the I Pediatric Otolaryngology Meeting/IV Pediatric Airway Meeting of the HCPA, Porto Alegre, RS, Brazil, June 24-26, 2011
- Ruído respiratório: Diagnóstico diferencial (Differential diagnosis in upper respiratory sounds)
  - Hemangiomas em via aérea (Airway hemangiomas)
  - PAINEL: Tratamento da surdez neurosensorial (Panel: Treatment of sensorineural), Síndromes genéticas em otorrinolaringologia” (Genetic syndromes in otolaryngology)
  - Avanços em massas cervicais na infância (Advances in pediatric neck masses)
- All that screams and makes us scream. AAP-CA3’s 12th Annual School Health Leadership Conference, San Diego, CA, October 24, 2009
- Challenging cases in pediatric otolaryngology: The experts ask the experts. OTOLOGY, Western Section of Pediatric Otolaryngology (WESPO) Meeting, UCLA, Los Angeles, CA, March 13, 2010
- Moderator of the otology session. American Society of Pediatric Otolaryngology 25th Annual Meeting, Las Vegas, NV, May 2, 2010
- The Cochlear Implant Program at RCHSD. RCHSD Estates and Trusts Committee, San Diego, CA, August 4, 2010
- Congenital hearing loss. Naval Hospital Otolaryngology Head and Neck Surgery Residency Didactic Program, San Diego, CA, October 1, 2010
- Putting a face to a name: Genes and hearing loss. The 2011 Sound Wave Symposium, San Diego, CA, February 11, 2011
- Being a bilingual physician in a bilingual world: How does that impact my practice? Ultimate Colorado Mid-Winter Meeting, Vail, CO, February 13, 2011
- Hearing Clinic: The San Diego Experience. Ultimate Colorado Mid-Winter Meeting, Vail, CO, February 14, 2011

#### Television, Radio and Newspaper

Rady’s Celebrates Kids with Cochlear Implants, interview by Katie Orr, KPBS, June 15, 2009

Music for Her Ears, Kids News Day San Diego Union Tribune, October 20, 2009

Entrevista Dra. Carvalho, Ipod afecta juvenes (Interview with Dr. Carvalho: Ipod affects teenagers). Interview in Spanish for the TV channel Univision, August 23, 2010

Teens and hearing loss. Interview for Channel 6 San Diego, September 2, 2010

Aumentan casos de sordera en jóvenes (Increase in the number of teenagers with hearing loss). Diálogo San Diego, September 9, 2010

#### Wen Jiang, MD

- Physician Development Award, Rady Children’s Foundation, 2011

#### Rady Children’s Specialists of San Diego, A Medical Foundation

- IT Committee—Member
- Division of Pediatric Otolaryngology
- Director of Thyroid Disease Center
- Director of Speech Endoscopy Program
- Director of IT
- Director of Invited Lecture Series

#### Poster Presentations

Pellman L, Simon L, Jiang W, Carvalho D. Individualized treatment of lateral sinus thrombosis. Is mastoidectomy necessary? American Society of Pediatric Otolaryngology 25th Annual Meeting, Las Vegas, NV, May 2010

#### Donald B. Kearns, MD

- Best Doctors in America 2009, 2010, 2011
- San Diego Super Doctors, 2011

#### Rady Children’s Hospital-San Diego

- Assistant Chief Medical Officer
- Board of Trustees (ex-officio)
- Supply and Equipment Task Force, co-chairman

#### Rady Children’s Specialists of San Diego, A Medical Foundation

- Surgeon in Chief
- Vice President and Director of Surgery
- Quality Committee Chairman

- Credentials Committee Chairman
- Board of Governance Committee

**Other Institutions**

- National Association of Children's Hospitals and Related Institutions
- Hospital De Las Californias Binational Committee
- Organization of Children's Hospitals Surgeons in Chiefs

**Presentations**

Broderick L, Page N, Carvalho D, Magit A, Jiang W, Simon L, Bothwell M, Kearns D, Pransky S, Hoffman H. Cellular immunity in periodic fever, aphthous stomatitis, pharyngitis, adenitis (PFAPA) syndrome. The Federation of Clinical Immunology Societies, Boston, MA, June 2010

Medical Practice Foundation at Rady Children's Hospital. Children's Hospital of Orange County, Orange, CA, 2010

Medical Practice Foundation Update. UCSD Department of Surgery, La Jolla, CA, 2010

The Medical Practice Foundation: A new model for pediatric healthcare. Leadership Development Institute, RCHSD, San Diego, CA, 2010

Cavanagh J, Hong P, Kearns D. Work environment and condition associated discomfort and injury. Annual Resident Research Day, Dalhousie University, Halifax, Nova Scotia, Canada, April 2011

Cavanagh J, Hong P, Kearns D. An ergonomics survey study of the American Society of Pediatric Otolaryngology Members. Canadian Society of Otolaryngology, Victoria, British Columbia, Canada, May 2011

Cavanagh J, Hong P, Kearns D. Work environment and condition associated discomfort and injury. American Society of Pediatric Otolaryngology 26th Annual Meeting, Chicago, IL, May 2011

Discovery at RCHSD. Leadership Development Institute, RCHSD. San Diego, CA, 2011

Pediatric disaster surge training. San Diego County Healthcare Disaster Council, San Diego, CA, 2011

Business Domain Curriculum. UCSD Pediatric Hospital Medicine Fellowship Course, UCSD Department of Pediatrics, San Diego, CA, 2011

**Anthony Magit, MD**

- Best Doctors in America 2009, 2010, 2011
- Physician Development Award, Rady Children's Foundation, 2010

**National/Regional Society Activities**

- Secretary, Society of Ear, Nose and Throat Advances in Children
- Co-Chairman, American Society of Pediatric Otolaryngology Ad Hoc Education Committee (2010)
- American Society of Pediatric Otolaryngology: Member Vascular Malformations Committee
- American Academy of Otolaryngology-Head and Neck Surgery: Member Guideline Panel
- American Academy of Otolaryngology-Head and Neck Surgery, Member Clinical Guideline Development Project

**Rady Children's Hospital-San Diego**

- Chief of Staff
- Medical Staff Executive Board
- Chairman, Credentials Committee (2010)
- Chairman, Institutional Review Board
- Co-Chairperson Quality, Safety and Medical Affairs Committee

**Rady Children's Specialists of San Diego,**

**A Medical Foundation**

- Member Clinical Research Advisory Committee
- Vice-Chairman Academic Affairs and Research Committee

**University California San Diego**

- Member UCSD Department of Surgery Research Advisory Committee
- Member UCSD Pediatric Human Subjects Protection Program

**Scientific Presentations**

Chronic sinusitis in children. Instructional Course, American Academy of Otolaryngology-Head & Neck Surgery Annual Meeting, 2009, 2010, 2011

Stridor in infants and children. Instructional Course, American Academy of Otolaryngology-Head & Neck Surgery Annual Meeting, 2009, 2010

Invited lecture: Cystic Fibrosis Update. UC Davis Otolaryngology-Head & Neck Surgery Grand Rounds, Sacramento, CA, January 25, 2011

#### Poster Presentations

Treatment of large lymphatic malformations of the head and neck in patients in early infancy. Society of Ear, Nose and Throat Advances in Children 37th Annual Meeting, Salt Lake City, UT, December 2009

Aspiration for management of large head and neck lymphatic malformations in early infancy. Society of Ear, Nose and Throat Advances in Children 37th Annual Meeting, Salt Lake City, UT, December 2009

#### Seth Pransky, MD

- Best Doctors in America 2009, 2010, 2011
- Best Doctors San Diego 2009, 2011
- Ray Skoglund Excellence in Teaching Award RCHSD 2011

#### National/Regional Society Activities

- Society of Ear, Nose and Throat Advances in Children, Member Program Committee for National Annual Meeting 2011
- Recurrent Respiratory Papillomatosis Task Force, Member, American Society Pediatric Otolaryngology

#### Rady Children's Hospital-San Diego

- Director, Satellite Services
- Member, Marketing Committee
- Member Regional Task Force Committee
- Member Children Health Network Marketing Committee

#### Rady Children's Specialists of San Diego,

##### A Medical Foundation

- Director, Pediatric Otolaryngology Department
- Member, Executive Board of Directors
- Director, Clinical Practice Committee
- Director, Clinical Operations Committee
- Vice Chair, Marketing Committee

#### Scientific Presentations

Simon LM, Tylor DA, Jiang W, Carvalho D, Bothwell MR, Kearns DB, Pransky SM, Magit AE. Survey of

thyroglossal duct cyst in a subspecialty referral practice. 24th Annual American Society of Pediatric Otolaryngology Annual Meeting, Seattle, WA, May 2009

Intralesional cidofovir for the treatment of pediatric recurrent respiratory papillomatosis. American Society of Pediatric Otolaryngology. 24th Annual Meeting, Seattle, WA, May 22, 2009

Trying to understand PFAPA and its management: Preliminary results of a prospective clinicopathologic study. Society for Ear, Nose and Throat Advances in Children 37th Annual Meeting, Salt Lake City, UT December 6, 2009

Inferior Turbinate reduction using coblation in a pediatric population: A prospective clinical evaluation. American Society of Pediatric Otolaryngology 25th Annual Meeting, Las Vegas, NV, May 1, 2010

Prevalence of elevated IGE levels in a consecutive series of pediatric ENT patients. Society for Ear, Nose and Throat Advances in Children 38th Annual Meeting, Cincinnati, OH, Dec 2, 2010

#### Poster Presentations

Pediatric inferior turbinate reduction: Comparison of coblation and radiofrequency ablation techniques. American Society of Pediatric Otolaryngology 24th Annual Meeting, Seattle, WA, May 22, 2009

Button battery ingestion in the pediatric population. American Academy of Otolaryngology Annual Meeting, San Diego, CA, October 4-7, 2009

Management of ankyloglossia in infants with compromised feeding. Society for Ear, Nose and Throat Advances in Children 37th Annual Meeting, Salt Lake City, UT, December 3-6, 2009

Vocal cord paralysis in infants with tracheoesophageal fistulas. Society for Ear, Nose and Throat Advances in Children 38th Annual Meeting, Cincinnati, OH December 2, 2010

#### Invited Lectures

##### International

Visiting Professor, LIX Annual Mexican Congress of Otolaryngology. Veracruz, Mexico, July 22-25, 2009 - Rhinosinusitis in Children: Diagnosis and Management

- The Draining Ear in Children
  - Round table: Management of Surgical Complications in Pediatric Otolaryngology
  - Human Papilloma Virus: Present and Future
  - Stridor in Infancy: Diagnosis and Management
- Invited Lecture, Human papilloma virus, present and future management issues. University of Montreal, Montreal, Canada, August 3, 2009
- Invited Lecture, Otorrhea in children: Approach and management 2009. 3rd Annual McGill Auditory Sciences Laboratory Guest Lectureship, Montreal Children's Hospital, Montreal, Canada, August 4, 2009
- Invited Professor X European Society of Pediatric Otolaryngology. Pamplona, Spain, June 5-8, 2010
- Round table: Voice Disorders: Papillomatosis
- Invited Guest Professor, Department of Otolaryngology University Medical Center, Utrecht. Grand Rounds: Update of Otorrhea 2011. Utrecht, The Netherlands, March 15, 2011
- Invited Lecture, Management of sinusitis in young children. Dialogues in Pediatric Otorhinolaryngology. Champéry, Switzerland, June 26-29, 2011

National

- Chronic sinusitis in children. Instructional Course American Academy of Otolaryngology-Head & Neck Surgery Annual Meeting, 2009, 2010, 2011
- Stridor in infants and children. Instructional Course American Academy of Otolaryngology-Head & Neck Surgery Annual Meeting, 2009, 2010
- Panel Moderator, Socioeconomic Panel: How to enhance your practice with clinical support. American Society of Pediatric Otolaryngology 24th Annual Meeting. Seattle, WA, May 22, 2009
- Faculty 34th National Primary Care Nurse Practitioner Symposium Copper Mountain, CO, July 16-19, 2009
- Foreign Bodies of the Ear, Nose and Throat.
- Faculty, Ultimate Colorado Mid-Winter Meeting: An Otolaryngology Update. Finesse in pediatric bronchoesophagology for the general otolaryngologist. Vail, CO, Jan 24-28, 2010
- Faculty, Western Section of Pediatric Otolaryngology (WESPO) Annual Meeting. Alternatives in endoscopic airway management. UCLA Medical Center Los Angeles, CA, March 13, 2010

- Panel Member American Academy of Otolaryngology Annual Scientific Meeting Pediatric Otolaryngology Miniseminar: Adjuvant Therapy for Juvenile Recurrent Respiratory Papillomatosis. Boston, MA, Sept 26-29, 2010
- Faculty, 67th Annual Brennemann Memorial Lectures; Los Angeles Pediatric Society, Anaheim, CA, October 7-10, 2010
- The Green Runny Nose-Is It Really Sinusitis
  - Hearing Loss in Infants and Newborns
  - Neck Masses-Differentiating Horses From Zebras
  - Round Table sessions: Stridor: Assessing the Airway from the Nose to the Lung
- Faculty, Pediatric Potpourri State of the Art 2011. AAP, California District IX, Chapter 2, Children's Hospital Los Angeles Meeting, Maui, HI, February 12-18, 2011
- Neck Masses-Horses and Zebras
  - The Runny Nose-Chronic Sinusitis and Beyond
  - Foreign Bodies of the Aerodigestive Tract-What Must I Discuss with Parents
  - Update on Otorrhea-2011
  - Update on Otitis media-2011
  - Stridor: From the nose to the lung (Lunchtime Seminar, repeated three times)
- Panel Moderator, Pediatric Airway Nightmares. American Society of Pediatric Otolaryngology 26th Annual Meeting, Chicago. IL, April 29, 2011
- Invited Lecture, Practical Pediatrics CME. Foreign Bodies of the Aerodigestive Tract-What Must I Discuss with Parents. San Diego, CA, May 14, 2011
- Faculty, Massachusetts Eye and Ear Institute Update in Pediatric Airway, Voice and Swallowing Disorders. Recurrent Respiratory Papillomatosis and the Voice: Treating the Airway and the Voice. Boston, MA, May 21, 2011

## PUBLICATIONS

- Blakely E, **Magit A**. The role of tonsillectomy in reducing recurrent pharyngitis: A systematic review. *Otolaryngology-Head and Neck Surgery*, 140:291-297, 2009.
- Bothwell M**. Twisted Trick. *Science World*, October 2009.
- Kearns D**, Woods M, Summerside P. Redefining the physician executive. *Physician Executive*, 35(1):32-38, 2009.
- Neely G, **Magit E**, et al. A practical guide to understanding systematic reviews and meta-analyses. *Otolaryngology-Head and Neck Surgery*, 140:291-297, 2009.
- Smith M, Zimmerman M, Burke D, **Magit A**, et al. Efficacy and safety of OK-432 immunotherapy of lymphatic malformations. *Laryngoscope*, 119(1):107-115, 2009.
- Bothwell M**. P3 Generation: Noise-induced hearing loss rising among children and adolescents. *ENT Today*, January 2010.
- Nely J, **Magit A**, Rich J, Voelker C, Wang E, Paniello R, Nussenbaum B, Bradley J. A practical guide to understanding systematic reviews and meta-analyses. *Otolaryngol Head Neck Surg*, 142(1):6-14, 2010.
- Hong P, Jurkowski Z, **Carvalho D**. Preoperative cerebral magnetic resonance imaging and white matter changes in pediatric cochlear implant recipients. *Int J Pediatr Otorhinolaryngol*, 74(6):658-60, 2010.
- Greenberg M, **Carvalho D**. Endoscopic adenoidectomy secondary to drug induced trismus. *Scientific Research*, 1(1):27-29, 2010.
- Hong P, Lago D, Seargeant J, Pellman L, **Magit A**, **Pransky S**. Defining ankyloglossia: A case series of anterior and posterior tongue ties. *Int J Pediatr Otorhinolaryngol*, 74(9):1003-1006, 2010.
- Wu A, **Carvalho D**. Congenital tympanic ring defect presenting as an external auditory canal mass. *Ear, Nose and Throat Journal*, 89(10):E44, 2010.
- Hilfiker M, Hulson J, **Kearns D**. Ergonomics and the physician executive. *Physician Executive*, 36(3):54-7, 2010.
- Page N, **Kearns D**. Labyrinthitis ossificans. *Arch of Oto HNS*, 137(3):303-305, 2011.
- Cole S, **Kearns D**, **Magit A**. Chronic esophageal foreign bodies and secondary mediastinitis in children. *Annals of Otolaryngology, Rhinology & Laryngology Ann Otol Rhinol Laryngol*. 120(8):542-5, 2011.

## BOOKS AND BOOK CHAPTERS

- Abe C, McDonough L, Cox S, Phalen D, Parker M, Hilfiker M, Schnell K, **Kearns D**. Pediatric Surge Planning. Train the Trainer. San Diego County Healthcare Disaster Council, San Diego, CA, 2011.
- Pransky S**, Simon L. Clinical Evaluation of Stridor. *Handbook of Pediatric Otolaryngology*, Shapiro, NL Editor, World Scientific Publishing Co., Singapore, pp. 183-212.
- Magit A**. Acute Upper Airway Obstruction. *Textbook of Clinical Pediatrics*, Second Edition, Springer Inc., (in press).
- Magit A**. Congenital Anomalies of the Respiratory Tract. *Textbook of Clinical Pediatrics*, Second Edition, Springer Inc., (in press).
- Magit A**. History and Physical Examination. *Textbook of Clinical Pediatrics*, Second Edition, Springer Inc., (in press).
- Pransky S**, Tylor D. Neoplasms of the Larynx, Trachea and Bronchi. *Pediatric Otolaryngology*, Bluestone CD, Stool SE, Editors, Fifth Edition, BC Decker, Inc. Toronto, Canada (in press).

## PUBLICATIONS IN PRESS

- Alyono J, Hong P, Nathan C, **Bothwell M**. Second branchial cleft anomaly with an ectopic tooth: A case report. *ENT Journal*.
- Simon L, **Magit A**. Incision and drainage of infected thyroglossal duct cyst is not associated with increased recurrence after Sistrunk procedure (accepted for publication, *Archives of Otolaryngology-Head and Neck Surgery*).
- Jones T, Jones S, Brugeaud A, **Bothwell M**, Chabbert C. The adequate stimulus for mammalian linear vestibular evoked potentials (VsEPs). *Hearing Research*, in press.



# SURGERY AND TRAUMA

The Division of Pediatric Surgery at Rady Children's Specialists of San Diego (RCSSD) provides care to infants, children and adolescents with surgical diagnoses. These diagnoses include congenital anomalies, abdominal and thoracic surgical diseases, solid tumors, organ transplantation and trauma. The Division provides surgical operative care for approximately 3,000 patients a year. The division provides hospital and office consultations and prenatal consultations for congenital disorders. All members of our board are certified in Pediatric and General Surgery. The Division of Pediatric Surgery continues to be a leader in minimally invasive procedures for children. Greater than ninety-eight percent of appendectomies are performed laparoscopically.

Dr. Timothy Fairbanks, has developed single site, minimally invasive procedures which result in essentially scarless operations. He has performed these procedures for appendectomies, splenectomies, cholecystectomies, funduplications and some thoracic conditions. Dr. Fairbanks is also working with Dr. George Chiang in Urology on additional procedures. Dr. Fairbanks is recognized nationally for his minimally invasive innovation.

Dr. Nicholas Saenz has special expertise and interest in Pediatric Surgical Oncology. He is the representative for the American College of Surgeons, and a member of the Emergency Medical Services for Children Trauma Advisory Committee for California.

Rady Children's Hospital-San Diego (RCHSD) is also the pediatric center in San Diego for renal and liver transplantation in partnership with the UCSD Transplantation Program. Dr. Karen Kling has provided on site surgical expertise in conjunction with the multidisciplinary kidney and liver transplant teams. In addition, she has been instrumental in designing, developing and implementing surgical applications for EPIC, the electronic health record at RCHSD.



*Left to right: Karen Kling, Stephen Bickler, Timothy Fairbanks, Nicholas Saenz, Mary Hilfiker, Janelle Dela Vina*

**Dr. Mary Hilfiker** is the Trauma Medical Director and Division Director and is on Hospital and Medical Foundation boards and committees.

**Dr. Stephen Bickler** is an international expert in establishing pediatric surgical care in developing nations. He is a leader for the multi-center NIH grant supporting these efforts.

RGHSD is the only American College of Surgeons nationally designated Level 1 pediatric trauma center in San Diego and Imperial counties. The hospital and division also receive injured children from the surrounding areas including Riverside County.

The trauma center cares for over 1000 patients a year who have been designated as Trauma Service Patients. Since the inception of the trauma system in San Diego in 1984, the trauma service at RGHSD has cared for approximately 30,000 children.

The trauma service is nationally recognized for disaster preparedness and planning and is working with the CDC on disaster plans.

## FACULTY/STAFF

**Stephen W. Bickler, MD**, Clinical Professor of Surgery and Pediatrics, UCSD

**Timothy Fairbanks, MD**, Assistant Professor of Surgery, UCSD

**Mary L. Hilfiker, PhD, MD, MMM**, Clinical Professor of Surgery, UCSD, Division Director, Trauma Medical Director

**Karen M. Kling, MD**, Associate Professor of Surgery, UCSD

**Nicholas C. Saenz, MD**, Clinical Professor of Surgery, UCSD

**Janelle De la Vina, NP**

## TRAUMA SERVICE STAFF

**Judy Bergman, RN, MS**, Trauma Nurse Educator

**Susan A. Cox, RN, MS, CPEN, PHN**, Director, Trauma Services

**Renee Douglas, RN, AA**, Trauma Clinical Coordinator

**Mary Beth Moran, PT, MEd**, Injury Prevention Coordinator

**Kevin Smith, RN, BSN**, Trauma Registrar Data Analyst

**Berda Taylor, BA**, Trauma Business Unit Coordinator

## CLINICAL ACTIVITIES

### Trauma

The top three causes of serious injury to children seen in San Diego are falls, motor vehicle crashes and pedestrian versus motor vehicle injuries.

## Major Goals and Plans

### Surgery Division

- Provide excellent surgical care to the children of San Diego and Imperial counties and the surrounding areas
- Establish a pediatric surgical training program
- Strengthen clinical research efforts

### Trauma Service

- Continually improve regional pediatric trauma care by maintaining accreditation as an American College of Surgeons Level 1 Pediatric Trauma Center
- Build regional, national and international recognition as a leader in disaster planning, pediatric trauma and injury prevention
- Strengthen clinical research efforts in trauma

In addition to clinical care, the trauma service staff members work to help families prevent injuries by sharing current trends via the RCHSD website, participating in media events and distributing educational materials such as one-page information sheets on a variety of injury prevention topics. Areas of special concern and focus for the past few years include the issues of pedestrians struck by motor vehicles, drowning and children injured by falling televisions.

The trauma center was re-certified by the American College of Surgeons as a Level 1 Pediatric Trauma Center in 2009 and will be revisited for recertification in early 2012.

Mary Beth Moran is actively developing injury prevention programs especially in regard to sports injuries and concussions. A Safety Store with equipment and supplies, such as helmets and car seats, to help prevent injuries is open at RCHSD.

### Pediatric Surgery

The Division work closely with the oncologists in the care of children with cancer and with the neonatologists and perinatologists in the care of newborns with congenital anomalies.

Division members are always available to provide immediate care for trauma patients and any urgent or emergent surgical problems. They are also actively

involved in teaching the surgical residents, pediatric residents, medical students and nurses.

## RESEARCH ACTIVITIES

Dr. Bickler does research involving disease patterns in developed and developing countries.

The Trauma Service conducts multiple epidemiologic studies and is actively involved in research projects with the Intensive Care and Emergency Medicine Fellows. These include research regarding the value of repeat imaging for head injuries, frequency of repeat imaging and use of hypertonic saline in concussion.

## TEACHING ACTIVITIES

All of the Surgery Division members participate in teaching residents and students from UCSD in addition to providing education for nursing and staff at RCHSD. All are members of RCSSD with faculty appointments at UCSD.

The Surgery Division members of the Trauma Department are involved in ongoing education and performance improvement. They also collaborate with adult

trauma centers in San Diego and the County of San Diego Emergency Medical Services in these endeavors.

Dr. Stephen Bickler is a consultant for the World Health Organization and travels internationally to teach and care for children with surgical disorders.

## AWARDS, HONORS AND MAJOR PRESENTATIONS

### Stephen W. Bickler, MD

Surgical priorities in public health. Global Burden of Surgical Diseases Working Group, American College of Surgeons, Chicago, IL, May 2009

Global Burden of Surgical Diseases. Keynote address, Bethune Round Table, Toronto, Canada, May 2009

Pediatric Abdominal Trauma-what you need to know. UCSD Critical Care Session, San Diego, CA, July 2009

Global Burden of Surgery Working Group

Global Initiative for Emergency and Essential Surgical Care (World Health Organization)

International Relief Teams (Board of Directors)

Reviewer, the Lancet, Bulletin of World Health Organization, World Journal of Surgery, Pediatric Surgery International

### Nicholas C. Saenz, MD

San Diego Magazine Top Doctor, 2009, 2010, 2011

Oncology Fellow Lecture Series, 2009

ALS graduate training Class, 2009, 2010, 2011

Best Doctor in San Diego, 2011

RN Residency Lectures 2009, 2010, 2011

EMS-C California Trauma Advisory Committee

### Karen M. Kling, MD

American's Top Surgeons 2008, 2010

Best Doctor's in America 2009, 2010, 2011

Cares Award, 2011

Course Director Pediatric Surgery Sub-Internship 2007-present

Champion-Pediatric Surgery block 2006-present (core medical school surgical clerkship)

Champion-Pediatric Surgery resident education 2006-present

Nursing Aspects: Pediatric liver transplantation. RCHSD Critical Care RN Lecture Series. San Diego, CA, June 1, 2011

Congenital Diaphragmatic Hernia. UCSD Basic Science Lecture Series. San Diego, CA, March 9, 2011

Evaluating minimally invasive surgery from a public health perspective. Annual Scientific Meeting of the Southern California Chapter of the ACS, Santa Barbara, CA, January 22, 2011

Long segment hirschprung disease with skip lesions: Report of a rare case and management. Annual Scientific Meeting of the Southern California Chapter of the ACS, Santa Barbara, CA, January 22, 2011

What's new in pediatric surgery. UCSD Surgical Grand Rounds, San Diego, CA, October 13, 2010

Transplantation: Mini seminar. RCHSD nursing education, July 2009

Pediatric IBD Consortium 2009-present

EPIC/Information Technology Committee 2008-present

Pediatric IBD (inflammatory bowel disease) Consortium to address and evaluate potential avenues for investigation Abdominal Solid Organ Transplant Committee 2006-present

### Mary L. Hilfiker, MD

Best Doctors 2010, 2011

Board of Directors, Trauma Center Association of America

### Timothy J. Fairbanks, MD

Best Doctors 2011

A developmental mechanism of intestinal villus malformation. American College of Surgeons 90th Annual Clinical Congress, Alimentary Tract Surgery Forum, New Orleans, LA, October 10-14, 2009

Single port laparoscopic appendectomy: The evolution of minimally invasive surgery in the pediatric population. Canadian Association of Pediatric Surgeons 2009 Annual meeting, Halifax, Nova Scotia, Oct 1-4, 2009

The progression of minimally invasive surgery in children: A comparison of single port versus traditional laparoscopy. 2009 American Academy of Pediatrics (AAP) National Conference and Exhibition, Section on Surgery. Washington, DC, October 16-20, 2009

Thoracoscopic repair of a recurrent congenital diaphragmatic hernia in an infant using XenMatrix™, a non-

cross-linked porcine dermal collagen matrix. 19th Annual Congress for Endosurgery in Children, sponsored by IPEG, Waikoloa, HI, June 8-12, 2010

Intestinal obstruction in the newborn. UCSD, General Surgery Resident Education Conference, San Diego, CA, March 2, 2011

The progression of minimally invasive surgery in children, a comparison of single port versus traditional laparoscopy. Santa Barbara, CA, January 23, 2010

Minimally invasive pediatric surgery. UCSD, General Surgery Grand Rounds, San Diego, CA, January 20, 2010

Reduced port appendectomy, the gold standard procedure for pediatric surgery. The Reduced Port Surgery Group. Philadelphia, PA, June 7, 2011

### Susan Cox, RN, MS, CPEN, PHN

Director of Trauma Services, an internationally recognized leader in disaster preparedness and immediate past President of the Society of Trauma Nurses

Demographics of child abuse: International Conference for Child and Family Advocacy, San Diego, CA, January 2009

What's new: Updates from the Eastern Association for the Surgery of Trauma Symposium. Advanced Trauma Symposium, RCHSD January 2010

President's Address. Society of Trauma Nurses Annual Conference, Orlando, FL, April 2010

Lessons in leadership. R. Adams Cowley Shock Trauma Center, Nursing Leadership Conference, Baltimore, MD, May 2010

Pediatric trauma considerations in disasters. CA4 DMAT Team Meeting, San Diego, CA, July 2010

Pediatric aspects of disaster. NDMS National Disaster Exercise, Hartford, CT (x3), July 2010

Lessons in leadership and succession planning. Trauma Managers' of California quarterly meeting, Davis, CA, July 2010

Disaster planning. What's the plan in your planning? Eastern Association for The Surgery of Trauma Annual Scientific Assembly, January 25, 2011

Trauma, the ultimate team experience and special consideration for children's in disaster planning. Templeton Pediatric Trauma Conference in Philadelphia, PA, March 4-5, 2011

Special considerations of pediatric disaster planning. Pediatric Surge Capacity Symposium for San Diego County. Train the Trainer Part 1, March 24, 2011

Evolution of a child abuse program in a level one trauma center. Society of Trauma Nurses Annual Conference, San Antonio, TX, March 29, 2011

Pediatric surge capacity disaster. Train the trainer Part 2, Sharp Healthcare for San Diego County Hospitals, April 6, 2011

Pediatric surge capacity disaster. Train the Trainer, abbreviated session, Scripps Encinitas Disaster Committee, April 15, 2011

Pediatric trauma triage-basic concepts presentation and facilitated discussion. California Pediatric Trauma Summit, Sacramento, CA, April 28, 2011

What's the plan in your disaster plan? RCHSD Trauma Symposium, Ronald McDonald House Conference Center, April 19, 2011

What's the plan in your disaster plan? and Pediatric disaster planning special pediatric considerations. Pittsburgh Children's Hospital, Disaster Symposium, Pittsburgh, PA, May 23, 2011

How prepared are you for a disaster? Scripps Healthcare Critical Care Symposium 2011

## PUBLICATIONS

Ameh E, Poneuru D, Nwomeh B, Lakhoo K, **Bickler S**. *Pediatric Surgery: A Comprehensive Textbook for Africa*, Global-HELP Organization, in press.

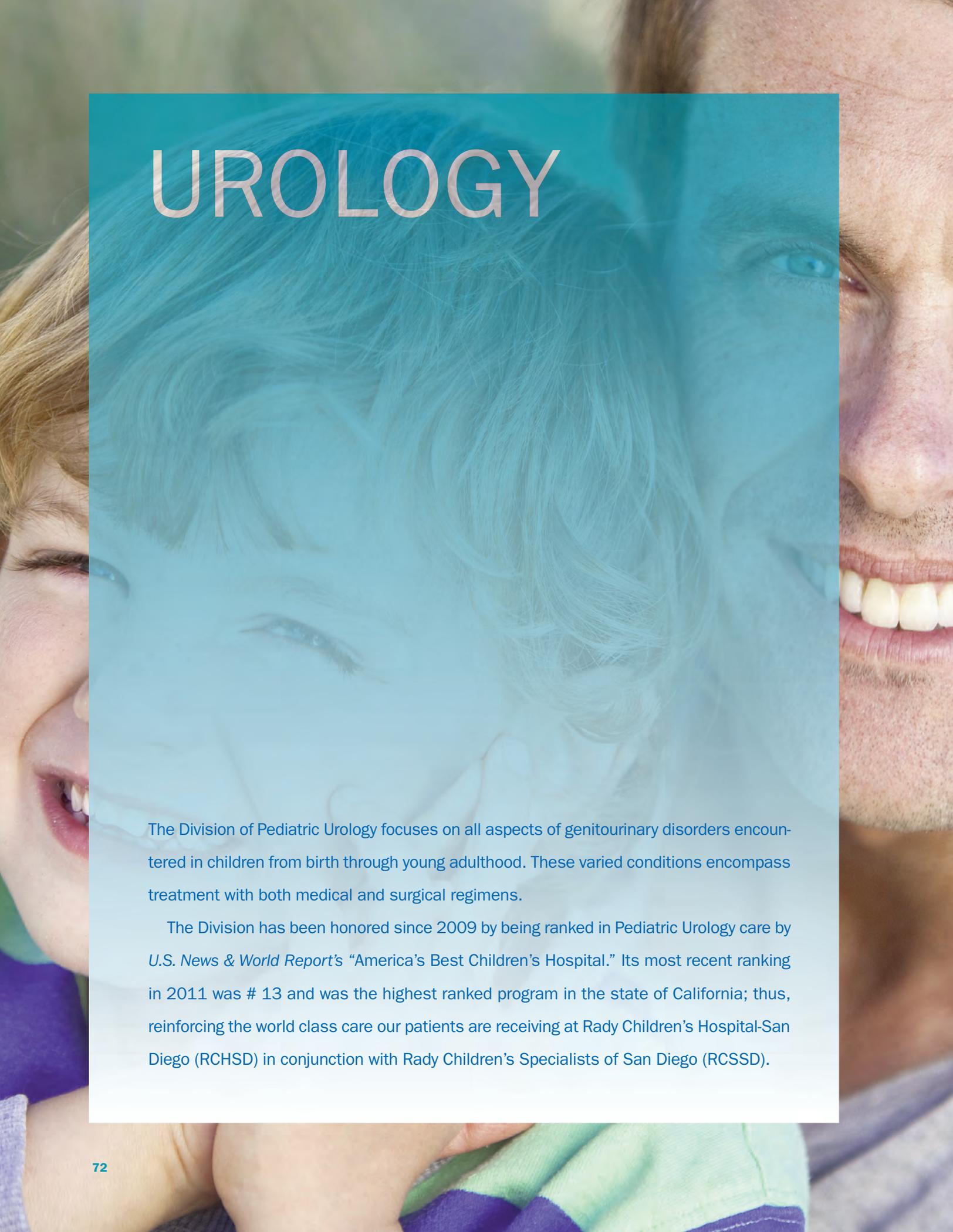
**Bickler S**, Spiegel D. Improving surgical care in low- and middle-income countries: A pivotal role for the World Health Organization. *World J Surg*. 34(3):346-390, 2010.

**Bickler S**, Ozgediz D, Gosselin R, Weiser T, Spiegel D, Hsia R, Dunbar P, McQueen K, Jamison D. Key concepts for estimating the burden of surgical conditions and the unmet need for surgical care. *World J Surg*. 34(3):374-380, 2010.

**Bickler S**, Ameh E. Surgical care for children: Guidelines for the primary referral hospital. MacMillan Publishers, in press.

Lovejoy A, Bush R, Pong A, **Hilfiker M**. A male adolescent with left iliac thrombophlebitis and heterozygous

- ity for factor v leiden mutation. *The Journal of Pediatric Surgery*, 44:1640-1642, 2009.
- Mock C, Cherian M, Juillard C, Donkor P, **Bickler S**, Jamison D, McQueen K. Developing priorities for addressing surgical conditions globally: Furthering the link between surgery and public health policy. *World J Surg*, 34(3):381-385, 2010.
- Ozgediz D, Hsia R, Weiser T, Gosselin R, Spiegel D, **Bickler S**, Dunbar P, McQueen K. Population health metrics for surgery: Effective coverage of surgical services in low-income and middle-income countries. *World J Surg*, 33(1):1-5, 2009.
- Osen H, Chang D, Cherian M, Ko C, **Bickler S**. Risk-adjusted Outcomes database as a tool to promote horizontal integration of surgical systems in low- and middle-income countries. *J Am Coll Surg*, 211(2):296-7, 2010.
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# UROLOGY

The Division of Pediatric Urology focuses on all aspects of genitourinary disorders encountered in children from birth through young adulthood. These varied conditions encompass treatment with both medical and surgical regimens.

The Division has been honored since 2009 by being ranked in Pediatric Urology care by *U.S. News & World Report's* "America's Best Children's Hospital." Its most recent ranking in 2011 was # 13 and was the highest ranked program in the state of California; thus, reinforcing the world class care our patients are receiving at Rady Children's Hospital-San Diego (RCHSD) in conjunction with Rady Children's Specialists of San Diego (RCSSD).



*Left to right: Puneeta Ramachandra, Madhu Alagiri, George Chiang, Sarah Marietti, George Kaplan, Quyen Nguyen, Nicholas Holmes*

## FACULTY/STAFF

**Nicholas M. Holmes, MD**, *Chief*, Division of Pediatric Urology, Associate Clinical Professor of Surgery, UCSD

**George W. Kaplan, MD, MS, FAAP, FACS**, Clinical Professor of Surgery and Pediatrics, UCSD

**Madhu Alagiri, MD**, Associate Clinical Professor of Surgery, UCSD

**George Chiang, MD**, Assistant Clinical Professor of Surgery, UCSD

**Sarah Marietti, MD**, Attending Physician, UCSD

## FELLOWS

**Puneeta Ramachandra, MD**, Junior Fellow, Pediatric Urology

## NURSE PRACTITIONERS

**Ann Marie Berger Finley, MSN, FNP**, Pediatric Urology

**Quyen Nguyen, CPNP**, Pediatric Urology

## CLINICAL ACTIVITIES

Over 5,000 patient visits per year were conducted in the Pediatric Urology Clinic in its main office on the campus of RCHSD and at its satellite clinics in Encinitas, Escondido, North County Coastal and Murrieta during 2009-2011. During the same time frame, over 2,600 surgical procedures per year were performed. We have expanded our minimally invasive single incision laparoscopy (SIL) beyond ablative procedure to include simple reconstructive procedures. We have expanded our SILs technique to include varicocelectomies, orchiopexies, orchiectomies, removal of urachal remnants, and creation of antegrade continence enemas (ACE) and continue with nephrectomies.

## RESEARCH ACTIVITIES

George Chiang is leading the way for clinical research in our Division. As part of our commitment to investigating cutting edge therapeutics and improving the quality of care for our patients, we are actively involved in several clinical trials. By partnering with the biomedical industry, we are investigating novel forms of medications for children with neurogenic bladder. We are in the process of screening and enrolling patients in one trial dedicated to neurogenic detrusor over-activity and children performing intermittent catheterization. In addition, we are an approved site for two additional studies involving children and neurogenic bladder with screening planned in 2012.

## Major Goals and Plans

- Development of urology clinical research program making available the most update clinical science trials
- Fellowship participation in CREST program at UCSD
- Expansion of the urology clinical guideline pathways to include the treatment of ambiguous genitalia, management of urological issues in the spinal defects patient and the transition of adolescent pediatric patients with chronic urologic problems into adulthood
- Development of a minimally invasive surgical center in the urology arena
- Development of clinically validated pathways for urology in-patients to optimize patient-centered care

Sarah Marietti in conjunction with Nicholas Holmes are creating and designing a database to retrospectively and prospectively categorize patients who have vesicoureteral reflux. Specifically, they hope to address issues concerning surgical outcomes and quality indicators in the treatment of this disease.

- Monthly Uropathology conference with pathology and pediatric urology faculty
- Monthly journal club with review of the pediatric urology literature
- Annual Grand Rounds held by the UCSD Division of Urology for the greater San Diego urologic community
- Participation in the “Noon Lecture Series” for UCSD Department of Pediatric residents and trainees

## TEACHING ACITVITIES

The Division of Pediatric Urology continues our commitment to graduate medical education training with its ACGME accredited fellowship. Since its inception in 1985, Dr. George Kaplan has been and continues to act as program director. Dr. Sarah Marietti was our most recent graduate who has joined as attending physician in 2011. Dr. Puneeta Ramachandra is our present fellow who is in her first year of training with anticipated fellowship completion in 2013.

The Division of Urology participates in the following teaching activities:

- Urology residents for the Naval Medical Center San Diego (NMCSD) and UCSD rotate on the service throughout the academic year
- Monthly Clinical Case Grand Rounds held jointly with NMCSD, UCSD and RCHSD
- Biweekly Uroradiology conference with radiology, pediatric urology and pediatric nephrology faculty
- Biweekly tutorial sessions for residents, fellows and faculty in pediatric urology

## AWARDS, HONORS AND MAJOR PRESENTATIONS

### Nicholas M. Holmes, MD

Reviewer for the Journal of Urology, Section of Pediatric Urology

Member, Quality Improvement Committee, RCHSD

Member, Medical Staff Executive Committee, RCHSD

Member, Kidney Transplant Committee, RCHSD

Member, Board of Governance Committee, RCSSD

Member, Clinical Information Advisory Council, RCHSD  
Medical Director, Clinical Documentation Improvement and ICD-10 Transition

Chief, Section of Urology, RCHSD

Member, Board of Directors, YMCA-Youth and Family Services

Member, Board of Directors, Society of Genitourinary Surgeons

Speaker, Grand Rounds Department of Pediatrics, Scripps Memorial Hospital November 2009

Moderator, The Management of Ureteroceles. American Urological Association Annual Meeting Plenary Session, San Francisco, CA, May 30, 2010

### **George W. Kaplan, MD, MS, FAAP, FACS**

Reviewer for the *Journal of Urology, Pediatrics, and Journal of Pediatric Surgery*

Chair, Transplant Committee, RCHSD

Chair, Children's Specialist Foundation

Member, History Committee, Western Section American Urological Association

Member, Quality of Care Committee, Children's Physicians Medical Group

Examiner, American Board of Urology

Lavengood Visiting Professor, Cornell University, October 2009

Myron Walzak Visiting Professor, University of Connecticut, November 2009

### **George Chiang, MD**

Member, Special Emphasis Panel for the CDC regarding funding for National Spina Bifida Registry

Moderator and Presenter for Hispanic Educational Forum: Spina Bifida Association

National Meeting Anaheim, CA, 2011

Member, Board of Director San Diego Spina Bifida

Organizer, 2nd Annual Winter Bifida December 2010 for awareness of Spina Bifida Faculty advisor, UCSD Project Nicaragua: Dedicated to Health Care Outreach and Education of the underserved in Nicaragua

Poster presentation, Bilateral Laparo-endoscopic Single Site Nephrectomy: a Pediatric Pretransplant Possibility, Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) Annual Meeting, San Antonio, TX 2011

### **Ann Marie Berger Finley, MSN, FNP**

Speaker, San Diego Center for Children Conference, April 2009

Member-at-Large, Society of Urologic Nursing and Associates (SUNA) Annual Conference Planning Committee

## **PUBLICATIONS**

Sparks S, DeCambre M, Christman M, **Kaplan G, Holmes N**. Salvage ureteral re-implantation following failure of dextranomer/hyaluronic acid injection. *Journal of Urology*, 186: 257-260, 2011.

**Marietti S, Holmes N, Chiang G**. Laparoendoscopic single-site (LESS) bilateral nephrectomy in pretransplant pediatric population. *Pediatric Transplantation*, 15 (4): 396-399, 2011.

Woldrich J, **Holmes N**, Palazzi-Churas K, **Alagiri M, Decambre M, Kaplan G, Chiang G**. Comparison of laparoendoscopic single-site, conventional laparoscopy, and open nephrectomy in a pediatric population. *Urology*, 78(1): 74-77, 2011.

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Chalmers D, Marietti S, Kim C. Xanthogranulomatous pyelonephritis in an adolescent. *Urology*, 76(6) 1472, 2010.

Hackett L, Tarsa M, Wolfson T, **Kaplan G**, Vaux K, Pretorius D. Use of multi-planar 3-dimensional ultrasonography for prenatal sex identification. *Journal of Ultrasound Medicine*, 29:195-202, 2010.

**FLIP BOOK TO READ**

**THE DEPARTMENT OF PEDIATRICS  
ANNUAL REPORT**