

### Division Photo



*F. Mangano, K. Bierbrauer, T. Maugans*

### Division Data Summary

#### Research and Training Details

Number of Faculty	4
Direct Annual Grant Support	\$29,988
Peer Reviewed Publications	6

#### Clinical Activities and Training

Number of Clinical Fellows	1
Outpatient Encounters	2511

## Division Highlights

### Kerry Crone, MD

Dr. Crone is actively researching ways to improve the delivery of care to Chiari patients. He is engaged in the Neurosurgery Fitzpatrick Chiari Foundation with a focus on educating parents about Chiari. The Fitzpatrick Fund will provide the opportunity to move forward in understanding the pathology and physiology of Chiari malformation with the goal to develop a classification system that better describes the condition. The research will provide families with a resource of information on Chiari malformation.

### Karin Bierbrauer, MD

Dr. Bierbrauer is involved in the "Cool Kids" Project that involves the study of brain trauma and the effects of hypothermia on the injury. Dr. Bierbrauer is collaboratively working with the University of Pittsburgh and Dr. Hector Wong, Critical Care Medicine on this project. Dr. Bierbrauer is co-investigator with Dr. Francesco Mangano and Dr. W.

Yaun in the DTI study of hydrocephalus (A Longitudinal Comparison of Pre- and Post-operative parameters in young hydrocephalic children).

### **Francesco Mangano, MD**

Dr. Mangano has a primary focus on the surgical treatment of patients with epilepsy. Other special interests include spinal oncology, the management of complex spinal pathology, the treatment of arteriovenous malformations, and neuro-oncology. He currently leads a research effort on the quantification of white matter degeneration using diffusion tensor imaging (DTI) in pediatric patients with hydrocephalus and its correlation to a basic science model.

### **Todd A. Maugans, MD**

Dr. Todd Maugans joined the division of Pediatric Neurosurgery in 2008. He practices general pediatric neurosurgery, with subspecialty interests in Neuro-Oncology, Craniofacial Surgery, and Cerebral and Spinal Dysraphism. He is conducting research with several Cincinnati Children's Hospital Medical Center departments and divisions; including the pathogenesis of vascular malformations associated with dysraphism; novel surgical techniques for craniofacial surgery; novel neuro-oncology protocols, and the evaluation and management of cerebral concussion. He is active in multiple professional pediatric neurosurgical organizations.

## **Faculty Members**

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**Kerry R. Crone, MD**, Professor ; *Director of Clinical Affairs and Graduate Education in Pediatric Neurosurgery; Director, Pediatric Neurosurgery*

**Karin S. Bierbrauer, MD**, Associate Professor

**Francesco T. Mangano, DO**, Assistant Professor

**Todd Maugans, MD**, Assistant Professor Clinical

## **Clinical Staff Members**

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- **Diane Baudentistial, PNP**
- **Brian Crowley, FNP**
- **Grace Deyo, PNP**
- **Christina Hockwalt, PA-C, MPAS**
- **Lynn Olberding, PNP**

## **Trainees**

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- **Jon DePowell, MD, Resident**, 2009, University of Cincinnati, PGY3
- **Vincent Dinapoli, MD, Resident**, 2009, University of Cincinnati, PGY3
- **John Hobbs, MD, Resident**, 2009, Allegheny General Hospital, PGY4
- **Charles Stevenson, MD, Fellow**, 2009, Vanderbilt University, PGY6

## **Significant Accomplishments**

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### **Surgical Epilepsy Program**

The comprehensive Surgical Epilepsy Program is a multidisciplinary team consisting of Neurosurgery, Neurology, Nursing, Child Life, Social Services and Hospital Leadership. Under the direction of Dr. Tracy Glauser, Dr. Ki Lee, and Dr. Francesco Mangano, the program is focused on serving pediatric patients throughout the region. The program focuses on the surgical evaluation and management of children with treatment resistant epilepsy. The Surgical Epilepsy Program will continue to grow its clinical and research commitment and improving the outcomes for Epilepsy surgery.

### **Hydrocephalus Research**

Research is led by Dr. Wei Hong and Dr. Francesco Mangano on the study of Hydrocephalus in young children. Hydrocephalus is a pathologic condition in which excessive cerebrospinal fluid accumulates in the brain. The excessive fluid causes pressure on the brain. The research incorporated the use of Diffusion Tensor Imaging which is a value in hydrocephalus management, helping predict the long term outcome based on the pre-treatment diffusion properties. This research was presented at the American Association of Neurological Surgeons/Congress of Neurological Surgeons (AANS/CNS) Joint Section on Pediatric Neurological Surgery Conference by research resident Dr. Ellen Air. For this presentation she was awarded the AANS/CNS Pediatric Section Hydrocephalus Association Award.

## Chiari Malformation Research

Dr. Kerry Crone has developed research in the area of Chiari Malformation. The study of Chiari Malformation includes a retrospective review of Dr. Crone's work on Chiari Malformation in the last 20 years. The intent of the research is to share knowledge about how Chiari is managed and treated. The ultimate goal is to meet the demand and to generate public awareness, attract and develop both professional and volunteer resources while raising funds necessary to accelerate our programs and achieve our goals.

## Division Publications

1. Hsieh PC, Ondra SL, Grande AW, O'Shaughnessy BA, Bierbrauer K, Crone KR, Halpin RJ, Suk I, Koski TR, Gokaslan ZL, Kuntz C. [Posterior vertebral column subtraction osteotomy: a novel surgical approach for the treatment of multiple recurrences of tethered cord syndrome](#). *J Neurosurg Spine*. 2009; 10: 278-86.
2. Air EL, Ghomri YM, Tyagi R, Grande AW, Crone K, Mangano FT. [Management of vagal nerve stimulator infections: do they need to be removed. Clinical article?](#). *J Neurosurg Pediatr*. 2009; 3: 73-8.
3. John N, Leach JL, Rachana T, Mangano FT. [Traumatic aneurysm of the occipital artery secondary to paintball injury](#). *Clin Neurol Neurosurg*. 2009; 111: 105-8.
4. Xiang J, Liu Y, Wang Y, Kirtman EG, Kotecha R, Chen Y, Huo X, Fujiwara H, Hemasilpin N, Lee K, Mangano FT, Leach J, Jones B, Degrauw T, Rose D. [Frequency and spatial characteristics of high-frequency neuromagnetic signals in childhood epilepsy](#). *Epileptic Disord*. 2009; 11: 113-25.
5. Coffey DJ, Maugans TA, Jenkyn LR. ["The geriatric patient."](#) *A guide to the primary care of neurological disorders*. New York [N.Y.]; Rolling Meadows, Ill.: Thieme ; American Association of Neurosurgeons; 2008: 361-371.
6. Maugans TA. ["Primary care medicine and the patient with diseases of the nervous system."](#) *A guide to the primary care of neurological disorders*. New York; Rolling Meadows, Ill.: Thieme ; American Association of Neurosurgeons; 2008: 3-8.

## Grants, Contracts, and Industry Agreements

### Grant and Contract Awards

### Annual Direct / Project Period Direct

Karin Bierbrauer, MD

**Pediatric Traumatic Brain Injury Consortium**

National Institutes of Health (University of Pittsburgh) (University of Pittsburgh)

U01 NS 052478

05/01/2007 - 06/30/09

\$29,988 / \$29,988

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**Current Year Direct**

**\$ 29,988**

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**Total \$ 29,988**

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