

Division Photo



*F. Mangano, K. Bierbrauer, T. Maugans
Not pictured: K. Crone*

Division Data Summary

Research and Training Details

Number of Faculty	5
Direct Annual Grant Support	\$90,000
Peer Reviewed Publications	7

Clinical Activities and Training

Number of Clinical Staff	6
Number of Clinical Fellows	1

Division Highlights

Dr. Karin S. Bierbrauer, M.D. and Dr. Hector Wong, M.D.

Neurotrauma Research - Dr. Bierbrauer continues in a second year as the site principal investigator for the "Cool Kids" hypothermia trial, an international multisite consortium based in Phoenix, Arizona, studying the effects of hypothermia on children with severe traumatic brain injuries. Dr. Bierbrauer is collaborating on this project with Dr. Hector Wong of the Division of Critical Care, who is the co-investigator for our institution in this important trial. Dr. Bierbrauer has two other ongoing clinical research projects studying the tethered spinal cord as it relates to imaging and outcomes.

Division Collaboration

Collaboration with Neurosurgery

Collaborating Faculty: Plastic Surgery

Craniofacial Multidisciplinary Clinic and Research - Dr. Todd Maugans is collaborating with CCHMC Plastic Surgeons Dr. Jesse Taylor, Dr. Christopher Gordon, and Dr. David Billmire to build a nationally recognized craniofacial program. In the past year, a combined clinic has been established where patients with craniosynostosis can be evaluated comprehensively and surgery can be planned as a team. Several contemporary surgical techniques have been developed and refined at Cincinnati Children's, including spring assisted calvarial vault remodeling, minimal access approaches, and the use of special medications to reduce blood loss. Additionally, Dr. Maugans will be participating with Dr. Gordon and his laboratory, investigating the role of micro-RNA in the embryogenesis of craniosynostosis.

Faculty Members

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

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

Trainees

- **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

Improving outcomes for Chiari malformation

Kerry Crone, MD, led research to measure and improve outcomes for patients with Chiari malformation, a group of conditions that can cause balance and vision problems, muscle weakness and paralysis. Using a 20-year database of outcomes-related data for Chiari malformation as its reference, Crone's team intends to publish a comprehensive analysis of treatment and outcomes for the disease.

The division will also implement a comprehensive multidisciplinary clinic this year to provide multi-specialty expertise on Chiari malformation.

Surgical epilepsy program

The Comprehensive Surgical Epilepsy Program, led by Francesco Mangano, DO, and Ki Lee, MD, provides surgical intervention for children with treatment-resistant epilepsy. Both our clinical and research initiatives will continue to grow as we strive to improve outcomes for children needing epilepsy surgery

Childhood concussions

Todd Maugans, MD, is leading research to measure and improve outcomes for patients with concussions. His work focuses on the acute metabolic and physiologic brain changes that occur when children suffer sports-related cerebral concussions. The research team will use magnetic resonance imaging and quantitative blood flow analysis to study 12 athletes between the ages of 5 and 17 who experience concussions, comparing them to 12 matched control subjects. Data will be acquired within 48 hours of injury, a period that has not been previously studied. Our ultimate goal is to develop an imaging-based screening and management tool for childhood concussions.

Hydrocephalus research

Mangano also is investigating ways to predict long-term outcomes for children treated for hydrocephalus. His ongoing research with Wei Hong incorporates the use of Diffusion Tensor Imaging (DTI), and is funded by the National Institute for Neurological Disease and Stroke (NINDS). The researchers have presented their findings at national and international conferences.

Division Publications

Grants, Contracts, and Industry Agreements

Grant and Contract Awards

Annual Direct / Project Period Direct

Maugans, T

Concussion: Define Physiologic Changes by MRI Techniques

University of Cincinnati

07/01/09 - 06/30/10

\$25,000 / \$25,000

Bierbrauer, K.

Pediatric Traumatic Brain Injury Consortium Hypothermia (Cool Kids Trial)

St. Joseph's Hospital & Medical Center

U01 NS 052478

05/1/2009 - 04/30/2011

\$65,000 / \$65,000

Current Year Direct

\$90,000

Total

\$90,000