

# Division of Pediatric General and Thoracic Surgery

DIVISION PROFILE	
Number of Faculty	17
Number of Joint Appointment Faculty	5
Number of Fellows	
Clinical Fellows	2
Research Fellows	9
Number of Other Students (full and part-time)	
Number of Support Personnel	63
Annual Total Grant Support (direct)	\$1,223,032
Annual Total Industry Contracts (direct)	\$56,941
Number of Peer Reviewed Publications	42
Patient Encounters	
Outpatient	8,429
Operating Room Cases	3,501

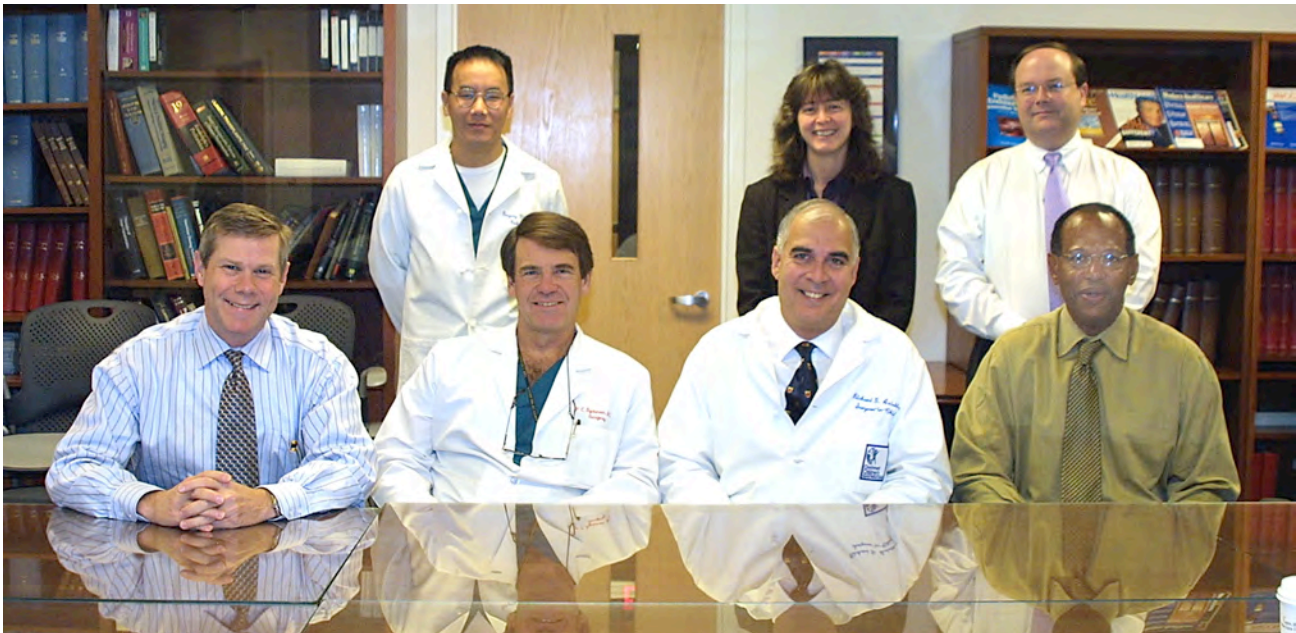
## FACULTY LISTING

Richard G. Azizkhan, MD, Professor of Surgery and Pediatrics, Surgeon-in-Chief, Division Director  
 Maria H. Alonso, MD, Assistant Professor of Surgery, Surgical Associate Director, Liver Transplant; Surgical Director, Kidney Transplant  
 Denis D. Bensard, MD, Professor of Surgery (appointment pending from UC), Director, Pediatric Surgery, St. Vincent Children's Hospital  
 Rebeccah L. Brown, MD, Assistant Professor of Surgery, Associate Director, Trauma Services  
 Timothy M. Crombleholme, MD, Professor of Surgery, Obstetrics/Gynecology, and Pediatrics, Director, Fetal Care Center of Cincinnati  
 Christopher R. Erwin, PhD, Research Assistant Professor  
 Richard A. Falcone, MD, Assistant Professor of Surgery, ECMO Director, Associate Director, Trauma Services  
 Victor F. Garcia, MD, Professor of Surgery and Pediatrics, Director, Trauma Services; Associate Surgical Director, Comprehensive Weight Management Center  
 Jun Guo, PhD, Research Assistant Professor  
 Richard J. Hendrickson, MD, Assistant Professor of Surgery (appointment pending from UC), Associate Director, Pediatric Surgery, St. Vincent Children's Hospital  
 Thomas H. Inge, MD/PhD, Assistant Professor of Surgery and Pediatrics, Surgical Director, Comprehensive Weight Management Center  
 Marc A. Levitt, MD, Assistant Professor of Surgery and Pediatrics, Associate Director, Colorectal Center for Children  
 Alberto Peña, MD, Professor of Clinical Surgery, Director, Colorectal Center for Children  
 Frederick C. Ryckman, MD, Professor of Clinical Surgery, Surgical Director, Liver Transplant; Clinical Director  
 Richard J. Stevenson, MD, Associate Professor of Surgery  
 Gregory M. Tiao, MD, Assistant Professor of Surgery, Associate Program Director, Fellowship  
 Brad W. Warner, MD, Professor of Surgery, Associate Director of CCRF for Surgical Research, Director, Surgical Research; Program Director, Fellowship

## FACULTY JOINT APPOINTMENT LISTING

Denise M. Adams, MD, Associate Professor, Division of Hematology/Oncology  
 Lesley L. Breech, MD, Assistant Professor, Obstetrics and Gynecology  
 William J. Polzin, MD, Obstetrics and Gynecology  
 Curtis A. Sheldon, MD, Professor of Clinical Surgery, Pediatric Urology  
 Jeffrey Livingston, MD, Assistant Professor, Obstetrics and Gynecology

## OVERVIEW



*Left to Right: (1<sup>st</sup> row) B. Warner, F. Ryckman, R. Azizkhan, V. Garcia  
(2<sup>nd</sup> row) G. Tiao, R. Brown, T. Crombleholme*

The vision set forth in the 2004 Strategic Plan for the Division of Pediatric General & Thoracic Surgery is to be the premier pediatric surgery program and the world leader in improving pediatric surgical care. In FY 06 the division continued to operate under this guiding principle and saw success and growth in both its clinical and research programs. Surgical volume in FY 06 was 3,501 cases, which is a 7% increase over FY 05. Outpatient clinical volume increased 10% from FY 05 with over 8,400 clinic visits provided by the division's 12 surgical faculty. The division's surgical research programs continue to grow under Dr. Warner's leadership as Director of Surgical Research. Six non-competing renewal grants were awarded, one new grant was funded and 7 grants are pending a decision.

- The clinical Pediatric Surgery Subspecialty programs continue to expand and have gained national and international recognition.
- The Colorectal Center for Children celebrated its first full year of operation at CCHMC in FY 06. The center has exceeded expectations by performing 280 surgical cases, 100 more than they were budgeted.
- During its third year, the Fetal Care Center has opened a fetal surgery unit- the first of its kind in the world. They have seen 30% more patients than budgeted since inception in 2004.
- The Hemangioma Vascular Malformation Center (HVMC) is continuing to be one of the leading centers and has shown an increase in clinic visits by 28%, seeing 574 patients in FY 06. Over 70% of patients come from outside the 8 county service area.
- Transplant surgeons, Drs. Alonso, Ryckman and Tiao performed 34 liver, 5 small bowel and 13 kidney transplants in FY 06.
- The Comprehensive Weight Management Center is the largest and most experienced surgical adolescent weight loss program, with over 70 operations since 2001.
- Other subspecialty programs include Aerodigestive Disease Sleep Disorder Center, Extracorporeal Membrane Oxygenation Program and Epidermolysis Bullosa.

There are 6 distinct research programs with external funding in the division. Dr. Warner's lab specializes in intestinal adaptation and shares lab space with Dr. Tiao whose lab is studying biliary atresia. Dr.

Crombleholme's research efforts are Twin-Twin Transfusion Syndrome & diabetic wound healing. Dr. Inge's clinical researchers are studying the health risks and outcomes in adolescent obesity and Drs. Brown, Falcone and Garcia oversee various injury prevention projects in Trauma Services.

The exceptionally strong educational programs make the division's fellowship position one of the most sought after in the United States. The division is able to recruit the top pediatric surgery fellowship candidates in the country. The division has established fellowship programs for Fetal Surgery, the Colorectal Center for Children and for HVMC to provide additional educational opportunities for those interested in more specialized pediatric surgery.

## HIGHLIGHTS

### Clinical

In 2005 Drs. Peña and Levitt launched the Colorectal Center for Children at CCHMC. It is the only pediatric multidisciplinary center that provides treatment for anorectal malformations, Hirschsprung's disease and other colorectal disorder and offers comprehensive management of these patients. The center's Bowel Management Program teaches parents and children how to manage bowel functions and has a 95% success rate in the week long program.

The new Fetal Care Center unit was opened in February 2006 and includes both inpatient and outpatient facilities and complements and expands services to include 2 state-of-the-art critical care/high risk rooms designed for women admitted after fetoscopic surgery, open fetal surgery or an EXIT procedure. Dr. Crombleholme has performed 73 surgical interventions since the creation of the FCC, which is a 13% surgical intervention rate of the 584 fetal consultations.

In 2006 the division expanded its staff of pediatric nurse practitioners (PNPs) from 4 to 6. The division has strengthened its partnership with the PNPs to help manage the increased patient volume in order to continue delivering excellent clinical care to patients and families without an increase in residents or fellows.

In 2006 the division was active in recruiting faculty to help serve the growing Fetal and Vascular Surgery areas. Dr. Foong-Yen Lim and Dr. Roshni Dasgupta will join the division as Assistant Professors. Dr. Lim will join the fetal surgery team in August 06. He comes to CCHMC from Children's Hospital of Philadelphia, where he recently completed his Pediatric Surgery fellowship. Dr. Dasgupta will start in October 06 and focus on vascular and oncology surgery and be a member of the Hemangioma Vascular Malformation Center. She completed her Pediatric Surgery fellowship at the Hospital for Sick Children in Toronto.

### Educational

Dr. Warner, Director, and Dr. Tiao, Associate Director, oversee the structure of the division's fellowship program. The division attracts outstanding candidates to train in the fellowship program. Dr. Ala Frey graduated in June 2006. Dr. Jaimie Nathan joined the division in July 2005 from Duke University. Dr. Shawn Rangel from Stanford University will begin his fellowship in July 2006. Dr. Sean Barnett from the University of Minnesota has matched with the division and will begin his fellowship in July 2007.

### Research

The divisional research programs continue to be extremely productive.

- Dr. Warner heads up the intestinal adaptation research laboratory which has had continuous NIH funding for over a decade.
- Dr. Crombleholme has expertise in wound healing and fetal cellular and molecular therapeutics research. He is NIH funded for his basic science wound healing research. He is the primary investigator of an NIH funded clinical trial focusing on the care management of Twin-Twin Transfusion Syndrome. This national trial has eighteen subcontracts and includes all the fetal centers in the United States.
- Dr. Tiao continues to develop his research in biliary atresia. He was awarded a CCHMC translational grant and an NIH Career Development Award.

- The Injury Prevention Program led by Drs. Garcia, Brown and Falcone are doing a number of injury prevention studies. The African American Youth Injury Prevention Initiative is a multi-generational program and has been recognized nationally as a model for lowering injuries in minority populations. Industry funding is supporting the development of an injury prevention program in the growing Hispanic population. The Seasonal Safety Program is presented in tri-state schools; the components include bicycle, helmet, water, fire and home safety. The Car Seat Program is outreaching to families in need of a child passenger safety seat. All of the programs offer both instruction and educational components.
- The Bariatric Surgery Research Program led by Dr. Inge is setting the national clinical/research agenda for overweight adolescents. The team has used industry funding to establish a database and clinical research consortium among pediatric hospitals to track surgical patients post operatively. In 2005 Dr. Inge was awarded funding for an NIH Small Grant Program and in 2006 he has been awarded an NIH Program Grant titled, Adolescent Bariatrics: Assessing Health Benefits & Risks. CCHMC is the only hospital in the US with 3 grants awarded by the NIH to study pediatric surgical weight loss surgery.

#### Personal Faculty Highlights

- Drs. Azizkhan, Warner, Crombleholme and Ryckman were recognized nationally as Best Doctor's in America, by Best Doctor's Inc.
- Drs. Azizkhan and Warner were locally recognized by Cincinnati Magazine as Best Doctors in Cincinnati
- Dr. Azizkhan received the R.K. Ghandi Gold Medal from the Indian Association of Pediatric Surgery in November 2005
- Dr. Garcia became a member of the Board of Directors for United Way of Greater Cincinnati
- Dr. Warner was inducted into the American Surgical Association in 2005

## TRAINING

Jaimie D. Nathan, MD.  
Ala S. Frey, MD

Duke University Medical Center  
University of Pittsburgh

## GRANTS, CONTRACTS AND INDUSTRY AGREEMENTS

Grant and Contract Awards Annual Direct/Project Period Direct

#### Crombleholme, T

Endothelial Progenitor Cell Recruitment in Diabetic Mice		
National Institutes of Health		
R01 DK 072446	08/01/05 – 07/31/09	\$205,000/\$820,000
Twin-Twin Transfusion Syndrome Trial		
National Institutes of Health		
R01 HD 041149	06/01/04 – 05/31/06	\$0/\$1,513,083
Endothelial Progenitor Cell Biology in Type 1 Diabetes		
National Institutes of Health		
R01 DK 074055	09/30/05 – 07/31/09	\$212,000/\$848,000

#### Inge, T

Adolescent Gastric By-Pass and Diabetic Precursors		
National Institutes of Health		
R03 DK 068228	07/01/05 – 06/30/07	\$100,000/\$200,000

Jones, K		
Evaluation of a Community-Based Intervention to Increase Hispanic Children's Use of Seat Belts and Rear Seating Ohio Department of Public Safety	07/01/05 – 06/30/06	\$5,000
Laurence, S		
Occupant Protection Regional Resource Program Plan Ohio Department of Public Safety	10/01/05 – 09/30/06	\$57,786
Greater Cincinnati Automobile Dealers Car Seat Program	04/01/06 – 03/30/07	\$14,840
Ricketts, C		
Teen Driving Awareness: A Comprehensive Program to Increase Seat Belt Use Ohio Department of Public Safety	10/01/05 – 09/30/06	\$70,233
Attorney General's Office Jim Petro - Special Needs Car Seat Fund	04/01/06 – 12/31/06	\$16,,895
Tiao, G		
Pathogenic Measures of Virus Induced Biliary Atresia National Institutes of Health K08 DK 072858	09/15/05 – 06/30/10	\$116,500/\$582,500
Warner, B		
Intestinal Adaptation and Epidermal Growth Factor National Institutes of Health R01 DK 053234	04/01/03 – 03/31/07	\$200,183/\$820,000
Enterocyte Apoptosis after Intestinal Resection National Institutes of Health R01 DK 059288	02/01/02 – 01/31/07	\$224,595/\$1,150,000
	Current Year Direct	\$1,223,032
Industry Contracts		
Inge, T		
Ethicon FABS		\$56,941
	Current Year Direct Receipts	\$56,941
	<b>TOTAL</b>	<b>\$1,279,973</b>

## PUBLICATIONS

1. Elluru RG, Azizkhan RG. Cervicofacial vascular anomalies. II. Vascular malformations. Semin Pediatr Surg 2006;15(2):133-9.
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4. Harkness UF, Crombleholme TM. Twin-twin transfusion syndrome: where do we go from here? *Semin Perinatol* 2005;29(5):296-304.
5. Keswani SG, Crombleholme TM, Rychik J, Tian Z, Mackenzie TC, Johnson MP, Wilson RD, Flake AW, Hedrick HL, Howell LJ, Adzick NS. Impact of continuous intraoperative monitoring on outcomes in open fetal surgery. *Fetal Diagn Ther* 2005;20(4):316-20.
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7. Marwan A, Crombleholme TM. The EXIT procedure: principles, pitfalls, and progress. *Semin Pediatr Surg* 2006;15(2):107-15.
8. Pawel BR, Crombleholme TM. Mesenchymal hamartoma of the chest wall. *Pediatr Surg Int* 2006;22(4):398-400.
9. Bernal NP, Stehr W, Coyle R, Erwin CR, Warner BW. Epidermal growth factor receptor signaling regulates Bax and Bcl-w expression and apoptotic responses during intestinal adaptation in mice. *Gastroenterology* 2006;130(2):412-23.
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15. Stehr W, Mercer TI, Bernal NP, Erwin CR, Warner BW. Opposing roles for p21(waf1/cip1) and p27(kip1) in enterocyte differentiation, proliferation, and migration. *Surgery* 2005;138(2):187-94.
16. Allen SR, Ignacio R, Falcone RA, Alonso MH, Brown RL, Garcia VF, Inge TH, Ryckman FC, Warner BW, Azizkhan RG, Tiao GM. The effect of a right-sided aortic arch on outcome in children with esophageal atresia and tracheoesophageal fistula. *J Pediatr Surg* 2006;41(3):479-83.
17. Fanta K, Cook B, Falcone RA, Jr., Ricketts C, Schweer L, Brown RL, Garcia VF. Pediatric trauma nurse practitioners provide excellent care with superior patient satisfaction for injured children. *J Pediatr Surg* 2006;41(1):277-81.
18. Ignacio RC, Falcone RA, Jr., Warner BW. Necrotizing fasciitis: a rare complication of neonatal necrotizing enterocolitis. *J Pediatr Surg* 2005;40(11):1805-7.
19. Allen SR, Lawson L, Garcia V, Inge TH. Attitudes of bariatric surgeons concerning adolescent bariatric surgery (ABS). *Obes Surg* 2005;15(8):1192-5.
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21. Garcia VF. Should adolescents have weight-loss surgery? *Contemp Surg* 2005;61(8):378-82.
22. Garcia VF, DeMaria EJ. Adolescent bariatric surgery: treatment delayed, treatment denied, a crisis invited. *Obes Surg* 2006;16(1):1-4.

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40. Tiao G, Ryckman FC. Pediatric liver transplantation. *Clin Liver Dis* 2006;10(1):169-97, vii.
41. Warner BW. Short bowel syndrome. In: Grosfeld JL, editor. *Pediatric surgery*; 6th ed. Philadelphia: Mosby/Elsevier; 2006. p. 1369-1382.
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