2012 Research Annual Report

Pediatric General and Thoracic Surgery

Division Data Summary

RESEARCH AND TRAINING DETAILS	
Number of Faculty	24
Number of Research Fellows	5
Number of Support Personnel	74
Direct Annual Grant Support	$2,084,963
Direct Annual Industry Support	$22,483
Peer Reviewed Publications	45

CLINICAL ACTIVITIES AND TRAINING	
Number of Clinical Staff	14
Number of Clinical Fellows	8
Number of Other Students	15
Inpatient Encounters	11,158
Outpatient Encounters	6,085

Division Photo

Row 1: G Tiao, R Falcone, R Brown, A Bischoff, B Dickie
Row 2: J Nathan, M Helmrath, M Levitt, D von Allmen
Row 3: S Barnett, A Peña , R Azizkhan
Row 4: T Inge, A Shaaban

Significant Accomplishments

Intestinal Rehabilitation

Michael Helmrath, MD, has expertise in gastrointestinal diseases that cause intestinal failure. His basic research is focused on the adaptive response of stem cells following surgical loss of the bowel. Multiple NIH-supported projects focus on the expansion of intestinal stem cells and the ability to culture and expand both murine and human intestinal epithelium. Clinically, he is the surgical director of the intestinal rehabilitation center and is actively involved in establishing the intestinal failure registry and outcome trials in this patient population.

Colorectal Center

Marc Levitt, MD, Alberto Pena, MD, Andrea Bischoff, MD, Jason Frischer, MD, Belinda Dickie, MD, Michael Helmrath, MD, make up the Colorectal Center Team. The Colorectal Center for Children is engaged in a quality of life research project, the FISH study, to assess how patients are doing following their participation in the Bowel Management Program to treat fecal incontinence. This involves collaboration among several pediatric surgeons, as well as with psychology, and nursing. Once the quality of life tool is complete, we anticipate that other collaborating Centers around the world will use the tool for the assessment of their patients. The Center's role in training pediatric surgeons in Africa continued its relationship with Accra, Ghana, where at Korle Bu Teaching hospital, four surgeons and four nurses are being trained in advanced pediatric colorectal techniques. The colorectal team visited the hospital there for the second time in March 2012; 34 children underwent complex colorectal reconstructions. The team included staff of Cincinnati Children's as well as surgeons and nurses from collaborating centers in the Netherlands, South Africa and Israel. So far, Korle Bu has served as

the regional center for pediatric colorectal problems and has cared for children from 10 surrounding African nations. The trip was supported by a $15,000 grant from Kind Cuts for Kids.

Our Center also collaborates with Johns Hopkins Medical Center on the genetic aspects of Hirschsprung's disease; we have the most patients enrolled in this study. We collaborate with John Clancy, MD, in Pulmonary Medicine, who is researching the CFTR gene and its role in constipation in patients without cystic fibrosis. Specimens from colorectal cases are being analyzed for this funded project.

Bariatric Surgery

Thomas Inge, MD, PhD, and Todd Jenkins, MPH, PhD, direct the Center for Bariatric Research and Innovation. In addition to participating in a long and growing list of collaborative studies, this Center partners with the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) to lead the national effort to prospectively gather data and publish evidence-based recommendations for use of weight loss surgery in adolescents.

The NIDDK-funded Teen LABS study, the largest multicenter study of outcomes following weight loss surgery, received five additional years of funding in 2011; five-year funding renewal was also granted to the study's data coordinating center, overseen by Jenkins and C. Ralph Buncher, ScD.

Division Highlights

Biology of Vascular Disease – Peter Dickie, PhD

Dr. Dickies' research laboratory was established to explore the underlying cellular defects associated with the development of lympathic malformations in humans. Several unique lymphatic endothelial cell lines have been established from patient lesions. Indicative of disease-causing potential, these have displayed aberrant behavior in in vitro functional assays and continue to be studied.

Trauma – Richard Falcone, MD, MPH

Dr. Falcone received funding from the Ohio Department of Public Safety for his work in trauma epidemiology, education and prevention. Dr. Falcone is the Director of the Trauma and Injury Prevention Program.

Extracorporeal Membrane Oxygenation – Jason Frischer, MD

Dr. Frischer is the Extracorporeal Membrane Oxygenation Program Director. He intends on applying to the National Institute of Health for a K08 in 2013.

Intestinal Rehabilitation – Michael Helmrath, MD

Dr. Helmrath is the Director of Surgical Research. He has expertise in gastrointestinal diseases resulting in intestinal failure. His basic science research is focused on the adaptive response of stem cells following surgical loss of the bowel. Multiple projects in the laboratory are focusing on the expansion of intestinal stem cells and the ability to culture and expand both murine and human intestinal epithelium. These projects are support by the National Institutes of Health. Clinically, he is the surgical director of the intestinal rehabilitation center and is actively involved in establishment of the intestinal failure registry and outcome trials in this patient population.

Bariatric Surgery – Thomas Inge, MD, PhD, FACS, FAAP

Dr. Inge and Dr. Jenkins together direct the Center for Bariatric Research and Innovation. In addition to participation in a long and growing list of collaborative studies, this Center partners with the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) to lead the national effort to prospectively gather data and publish evidence-based recommendations for use of weight loss surgery in adolescents. The Teen LABS

study continues to be funded by the NIDDK, the largest multicenter study to document outcomes of adolescents undergoing weight loss surgery. The Teen-LABS Competitive Renewal Grant was awarded another 5 years of funding in September 2011 to continue this important research. Dr. Inge is the Surgical Director of the Surgical Weight Loss Program for Teens.

Teen-LABS Data Coordinator Center (DCC) – Todd Jenkins, PhD, MPH

Dr. Jenkins and Dr. Buncher together direct the Teen-LABS Data Coordinator Center (DCC) that was awarded 5-year renewal funds in September 2011. The DCC provides data management and statistical expertise, as well as administrative support to the Teen-LABS consortium and ancillary investigations. Dr. Jenkins co-directs the Center for Bariatric Research and Innovation.

Molecular Fetal Therapy – Helen Jones, PhD

Dr. Jones research investigates placental function in cases of placental insufficiency and intrauterine growth restriction with a focus on developing a nanoparticle delivery method for placental treatment. Her research is funded by a K99/R00 Pathway to Independence Award from the Eunice Kennedy Shriver National Institute of Child Health and Human Development. She is currently pursuing a secondary appointment in the Division of Reproductive Sciences.

Wound Care Services – Sundeep Keswani, MD

Dr. Keswani is focusing on the molecular mechanisms underlying the fetal regenerative wound healing phenotype. If the goals of the project are realized, his work may yield a wide range of therapeutics for diseases characterized by excessive fibroplasia. His basic science interests in fetal wound healing are closely paired with his clinical practice in fetal surgery and he is the Surgical Director for the Pediatric Advanced Wound Care Service which opened in January, 2012. His research is funded by a K08 award from the National Institute of Health.

Colorectal Center – Marc Levitt, MD

Dr. Levitt is actively engaged in a quality of life research project, (the FISH study) to assess how patients are doing following their participation in the Bowel Management Program to treat fecal incontinence. Dr. Levitt traveled to Africa to train pediatric surgeons in colorectal techniques. The trip was supported by at $15,000 grant from Kind Cuts for Kids. Dr. Levitt is the Director of the Colorectal Center.

Fetal Care Center – Foong-Yen Lim, MD

Dr. Lim has expertise in wound healing and fetal cellular and molecular therapeutics research. He is the Surgical Director of the Fetal Care Center.

Chronic Liver Disease – Jaimie Nathan, MD

Dr. Nathan will focus to elucidate the role of the gut microbiome in the modulation of liver injury and cholangiopathies. His studies involve a novel mouse model of small bowel bacteria overgrowth, in which a small bowel self-filling blind loop is surgically created. With this model, he is studying the gut-liver axis as it relates to the pathogenesis of a number of cholangiopathies which can progress to end-stage liver disease.

Biliary Atresia – Gregory Tiao, MD

Dr. Tiao continues to develop his research in Biliary Atresia through an ongoing R01 project funded by the National Institutes of Health. Dr. Tiao is the Surgical Director of Liver Transplantation and the Director of the Small Bowel Program.

Same Day Consultation/Surgery Program - Sean Barnett, MD

Dr. Barnett leads the same day consultation/surgery program at Cincinnati Children's Medical Center Liberty

Campus. He has operated on close to 200 patients over the past 2.5 years and continues to have excellent satisfaction from both parents and referring physicians. He has presented at national meetings and has helped other institutions develop their own program. Other divisions within the institution have begun to replicate this experience into their own practice.

Significant Publications

Hammill AM, Wentzel MS, Gupta A, Nelson S, Lucky A, Elluru R, **Dasgupta R**, **Azizkhan RG**, Adams DM. **Sirolimus for the Treatment of Complicated Vascular Anomalies in Children.** *Pediatr Blood Cancer.* 1;57(6): 1018-24. Dec 2011.

This paper provided evidence supporting the need for a clinical trial of sirolimus in patients with vascular anomalies. The choice of sirolimus for patients with refractory lymphatic anomalies is rational. The mammalian target of rapamycin (mTOR) pathway is associated with lymphangiogenesis in preclinical studies. Sirolimus has been effective for vascular anomalies in syndromes with upregulated mTOR activity, specifically hamartomas in patients with PTEN mutations and vascular tumors in patients with tuberous sclerosis. In this study, patients given sirolimus were heavily pretreated with traditional therapies. Given their refractory course, the expected mortality for these patients was almost certainly >50%, yet all survived with improvement in symptoms. Diligent reporting of side effects and length of follow-up >12 months in five of these patients demonstrates tolerability and implies lasting effect. Most excitingly, the authors have opened a phase 2 clinical trial in which over 40 patients have been recruited.

Patel M, Racadio J, **Levitt MA**, Bischoff A, Racadio J, **Peña A**. **Complex Cloacal Malformations: Use of Rotational Fluoroscopy and 3D Reconstruction in Diagnosis and Surgical Planning.** *Pediatric Radiology.* 42(3): 355-63. Mar 2012.

New modality combining fluoroscopy and 3d reconstruction to visualize the anatomy of a cloacal anomaly which has provided better preoperative anatomic assessment of this complex colorectal problem and helped with surgical planning.

Bondoc A, Taylor J, **Alonso M**, **Nathan, J**, Wang Y, Balistreri W, Bezerra J, **Ryckman FC**, **Tiao G**. **The Beneficial Impact of Revision of Kasai Portoenterostomy for Biliary Atresia: An Institutional Study.** *AnnSurg.* 255(3): 570-6. mar 2012.

Biliary atresia remains a devastating disease of childhood. Kasai portoenterostomy continues to be the first surgical intervention utilized that might salvage the native liver. If the Kasai fails, transplantation is necessary for long term survival. In this study, we found that a sub population of patients who show symptoms of a failing Kasai can be salvaged by Kasai revision precluding the need for liver transplantation. This study provides the basis for future multi-institutional trials to study the effectiveness of Kasai revision.

Bischoff A, **Levitt MA**, **Peña A**. **Total Colonic Aganglionosis – A Surgical Challenge: How to Avoid Complications.** *Pediatr Surg Int*. 27(10): 1047-52. Oct 2011.

Total colonic aganglionosis is a serious condition that requires further study to improve the long term quality of life for the patients who suffer from it. The number of complications observed in these patients under the best circumstances is extremely high. The paper includes valuable advice to prevent complications such as ileostomy prolapse, severe diaper rash and obstructive symptoms. Special emphasis is placed on the importance of preserving the anal canal to try to prevent fecal incontinence. A modality of management that has never been reported consists in maintaining the ileostomy open until the patients are toilet trained for urine and tolerate rectal irrigations. The reason for this is that patients younger than 3 years of age cannot control the multiple, liquid bowel movements produced by a total colectomy. As a consequence, the babies suffer from severe diaper rash. A 3 year old or older child that is toilet trained for urine can become toilet trained for

stool in a few days, provided the anal canal has been meticulously preserved during the colonic resection. It is highly desirable for the patient to tolerate rectal irrigations because it is well known that these patients suffer from higher incidence of enterocolitis and we consider rectal irrigations the most important therapeutic maneuver to treat this complication.

Barnett SJ, **Frischer JS,** Gaskey J, **Ryckman FC**, Von Allmen D. **Pediatric Hernia Repair: 1-Stop Shopping.** *Journal of Pediatric Surgery.* 47(1):213-6. Jan 2012.

Multiple visits for the evaluation, treatment, and follow-up of straightforward surgical problems (hernias) are inconvenient, can result in lost work for the parents, and missed school for the child. This paper documents a pilot program started by the general surgery division at the Liberty campus to see these types of patients in the clinic and operate on them on the same day, thus decreasing the number of visits. The paper looked at a total of 61 kids demonstrating high diagnosis confirmation levels and excellent patient satisfaction. It represents a seminal paper on the topic. Since its presentation at APSA annual meeting and subsequent publication, the program has doubled in the number of patients seen (now close to 200 total) and operated on per year and has met with significant kudos from parents and primary care providers alike. Many other institutions as well as other divisions within Cincinnati Children's have begun to develop their own programs based on this experience.

Division Publications

1. Balaji S, Vaikunth SS, Lang SA, Sheikh AQ, Lim FY, Crombleholme TM, Narmoneva DA. **Tissue-engineered provisional matrix as a novel approach to enhance diabetic wound healing**. *Wound Repair Regen*. 2012; 20:15-27.
2. Barnett SJ, Frischer JS, Gaskey JA, Ryckman FC, von Allmen D. **Pediatric hernia repair: 1-stop shopping**. *J Pediatr Surg*. 2012; 47:213-6.
3. Barnett SJ, Garcia VF, Inge TH. **Bariatric Surgery in Adolescents**. *Pediatric surgery*. Philadelphia: Elsevier Saunders; 2012:1041-1050.
4. Barnett SJ, Ryckman FC. **Vascular Access in the Newborn**. *Newborn surgery*. London: Hodder Arnold; 2011:159-166.
5. Bingham NC, Rose SR, Inge TH. **Bariatric surgery in hypothalamic obesity**. *Front Endocrinol (Lausanne)*. 2012; 3:23.
6. Bischoff A, Levitt MA, Pena A. **Laparoscopy and its use in the repair of anorectal malformations**. *J Pediatr Surg*. 2011; 46:1609-17.
7. Bischoff A, Levitt MA, Pena A. **Total colonic aganglionosis: a surgical challenge. How to avoid complications?**. *Pediatr Surg Int*. 2011; 27:1047-52.
8. Bondoc AJ, Taylor JA, Alonso MH, Nathan JD, Wang Y, Balistreri WF, Bezerra JA, Ryckman FC, Tiao GM. **The beneficial impact of revision of Kasai portoenterostomy for biliary atresia: an institutional study**. *Ann Surg*. 2012; 255:570-6.
9. Burton KS, Pendergrass TL, Byczkowski TL, Taylor RG, Moyer MR, Falcone RA, Geis GL. **Impact of simulation-based extracorporeal membrane oxygenation training in the simulation laboratory and clinical environment**. *Simul Healthc*. 2011; 6:284-91.
10. Calvo-Garcia MA, Kline-Fath BM, Levitt MA, Lim FY, Linam LE, Patel MN, Kraus S, Crombleholme TM, Pena A. **Fetal MRI clues to diagnose cloacal malformations**. *Pediatr Radiol*. 2011; 41:1117-28.
11. Chatoorgoon K, Pena A, Lawal TA, Levitt M. **The problematic Duhamel pouch in Hirschsprung's disease: manifestations and treatment**. *Eur J Pediatr Surg*. 2011; 21:366-9.
12. Chen W, Wagner L, Boyd T, Nagarajan R, Dasgupta R. **Extralobar pulmonary sequestration presenting with torsion: a case report and review of literature**. *J Pediatr Surg*. 2011; 46:2025-8.

13. Chernoguz A, Crawford K, Donovan E, Vandersall A, Berglund C, Cripe TP, Frischer JS. **EGFR inhibition fails to suppress vascular proliferation and tumor growth in a Ewing's sarcoma model**. *J Surg Res*. 2012; 173:1-9.
14. Chernoguz A, Crawford K, Vandersall A, Rao M, Willson T, Denson LA, Frischer JS. **Pretreatment with anti-VEGF therapy may exacerbate inflammation in experimental acute colitis**. *J Pediatr Surg*. 2012; 47:347-54.
15. Cho H, Balaji S, Sheikh AQ, Hurley JR, Tian YF, Collier JH, Crombleholme TM, Narmoneva DA. **Regulation of endothelial cell activation and angiogenesis by injectable peptide nanofibers**. *Acta Biomater*. 2012; 8:154-64.
16. Coe A, Collins MH, Lawal T, Louden E, Levitt MA, Pena A. **Reoperation for Hirschsprung's disease: pathology of the resected problematic distal pull-through**. *Pediatr Dev Pathol*. 2012; 15:30-8.
17. Dasgupta R, Rodeberg DA. **Update on rhabdomyosarcoma**. *Semin Pediatr Surg*. 2012; 21:68-78.
18. Divanović A, Cnota J, Ittenbach R, Tan X, Border W, Crombleholme T, Michelfelder E. **Characterization of diastolic dysfunction in twin-twin transfusion syndrome: association between Doppler findings and ventricular hypertrophy**. *Journal of the American Society of Echocardiography*. 2011; 24:834-840.
19. Fischer JE. **Eventration of the diaphragm**. *Fischer's Mastery of Surgery*. Philadelphia: Lippincott Williams & Wilkins; 2011:745-752.
20. Fischer JE. **Hepatoportoenterostomy**. *Fischer's Mastery of Surgery*. Philadelphia: Lippincott Williams & Wilkins; 2011:1343-1349.
21. Fischer JE, Azizkhan R. **Jejunoileal atresia and stenosis**. *Succeeding in Paediatric Surgery Examinations: Volume 1 : a Complete Resource for EMQs & a Complete Resource for MCQs*. Oxford: Radcliffe; 2012.
22. Garrett KM, Levitt MA, Peña A, Kraus SJ. **Contrast enema findings in patients presenting with poor functional outcome after primary repair for Hirschsprung's disease**. *Pediatr Radiol*. 2012; :1-8.
23. Goldberg J, McClaine RJ, Cook B, Garcia VF, Brown RL, Crone K, Falcone RA, Jr.. **Use of a mild traumatic brain injury guideline to reduce inpatient hospital imaging and charges**. *J Pediatr Surg*. 2011; 46:1777-83.
24. Habli M, Michelfelder E, Cnota J, Wall D, Polzin W, Lewis D, Lim FY, Crombleholme TM. **Prevalence and progression of recipient-twin cardiomyopathy in early-stage twin-twin transfusion syndrome**. *Ultrasound Obstet Gynecol*. 2012; 39:63-8.
25. Hammill AM, Wentzel M, Gupta A, Nelson S, Lucky A, Elluru R, Dasgupta R, Azizkhan RG, Adams DM. **Sirolimus for the treatment of complicated vascular anomalies in children**. *Pediatr Blood Cancer*. 2011; 57:1018-24.
26. Hamrick M, Eradi B, Bischoff A, Louden E, Pena A, Levitt M. **Rectal atresia and stenosis: unique anorectal malformations**. *J Pediatr Surg*. 2012; 47:1280-4.
27. Ida JB, Livshitz I, Azizkhan RG, Lucky AW, Elluru RG. **Upper airway complications of junctional epidermolysis bullosa**. *J Pediatr*. 2012; 160:657-661 e1.
28. Jeffreys RM, Hrovat K, Woo JG, Schmidt M, Inge TH, Xanthakos SA. **Dietary assessment of adolescents undergoing laparoscopic Roux-en-Y gastric bypass surgery: macro- and micronutrient, fiber, and supplement intake**. *Surg Obes Relat Dis*. 2012; 8:331-6.
29. Jenkins TM, Xanthakos SA, Zeller MH, Barnett SJ, Inge TH. **Distance to clinic and follow-up visit compliance in adolescent gastric bypass cohort**. *Surg Obes Relat Dis*. 2011; 7:611-5.
30. Lawson ML, Mellins RB, Paulson JF, Shamberger RC, Oldham K, Azizkhan RG, Hebra AV, Nuss D, Goretsky MJ, Sharp RJ, Holcomb GW, 3rd, Shim WK, Megison SM, Moss RL, Fecteau AH, Colombani PM, Moskowitz AB, Hill J, Kelly RE, Jr.. **Increasing severity of pectus excavatum is associated with**

reduced pulmonary function. *J Pediatr*. 2011; 159:256-61 e2.
31. Le LD, Keswani SG, Biesiada J, Lim FY, Kingma PS, Haberman BE, Frischer J, Habli M, Crombleholme TM. **The congenital diaphragmatic hernia composite prognostic index correlates with survival in left-sided congenital diaphragmatic hernia**. *J Pediatr Surg*. 2012; 47:57-62.
32. Leung A, Crombleholme TM, Keswani SG. **Fetal wound healing: implications for minimal scar formation**. *Curr Opin Pediatr*. 2012; 24:371-8.
33. Neuman J, Calvo-Garcia MA, Kline-Fath BM, Bitters C, Merrow AC, Guimaraes CV, Lim FY. **Prenatal imaging of amniotic band sequence: utility and role of fetal MRI as an adjunct to prenatal US**. *Pediatr Radiol*. 2012; 42:544-51.
34. Obert L, Munyon R, Choe A, Rubenstein J, Azizkhan R. **Rare late complication of the Nuss procedure: a case report**. *J Pediatr Surg*. 2012; 47:593-7.
35. Patek KJ, Kline-Fath BM, Hopkin RJ, Pilipenko VV, Crombleholme TM, Spaeth CG. **Posterior fossa anomalies diagnosed with fetal MRI: associated anomalies and neurodevelopmental outcomes**. *Prenat Diagn*. 2012; 32:75-82.
36. Patel MN, Racadio JM, Levitt MA, Bischoff A, Pena A. **Complex cloacal malformations: use of rotational fluoroscopy and 3-D reconstruction in diagnosis and surgical planning**. *Pediatr Radiol*. 2012; 42:355-63.
37. Pena A. **Anorectal anomalies**. *Newborn Surgery*. Hodder Arnold Publishers; 2012:1289-1309.
38. Pena A, Bischoff A, Levitt MA. **The transpubic approach for the correction of complex anorectal and urogenital malformations**. *J Pediatr Surg*. 2011; 46:2316-20.
39. Podberesky DJ, Weaver NC, Anton CG, Lawal T, Hamrick MC, Alam S, Pena A, Levitt MA. **MRI of acquired posterior urethral diverticulum following surgery for anorectal malformations**. *Pediatr Radiol*. 2011; 41:1139-45.
40. Pokall S, Maldonado AR, Klanke CA, Katayama S, Morris LM, Vuletin JF, Lim FY, Crombleholme TM. **Compensatory lung growth in NOS3 knockout mice suggests synthase isoform redundancy**. *Eur J Pediatr Surg*. 2012; 22:148-56.
41. Prada CE, Sellars EA, Spaeth CG, Kline-Fath BM, Crombleholme TM, Hopkin RJ. **Severe cervical scoliosis in the fetus**. *Prenat Diagn*. 2011; 31:1198-202.
42. Shin CR, Nathan J, Alonso M, Yazigi N, Kocoshis S, Tiao G, Davies SM. **Incidence of acute and chronic graft-versus-host disease and donor T-cell chimerism after small bowel or combined organ transplantation**. *J Pediatr Surg*. 2011; 46:1732-8.
43. Von Allem D, Fallot ME. **Ovarian Tumors**. *Pediatric Surgery*. Philadelphia: Elsevier Saunders; 2012:529-548.
44. Wang W, Donnelly B, Bondoc A, Mohanty SK, McNeal M, Ward R, Sestak K, Zheng S, Tiao G. **The rhesus rotavirus gene encoding VP4 is a major determinant in the pathogenesis of biliary atresia in newborn mice**. *J Virol*. 2011; 85:9069-77.
45. Weiss BD, Dasgupta R, Gelfand MJ, Laor T, Yin H, Breneman JC, Lavigne R, Elluru RG, Wagner LM. **Use of sentinel node biopsy for staging parameningeal rhabdomyosarcoma**. *Pediatr Blood Cancer*. 2011; 57:520-3.

Faculty, Staff, and Trainees

Faculty Members

Daniel von Allmen, MD, Professor

Leadership Division Director

Richard Azizkhan, MD, Professor

Leadership Surgeon-in-Chief

Maria H. Alonso, MD, Associate Professor

Leadership Surgical Director, Kidney Transplant Program; Co-Surgical Director, Intestinal Transplant Program

Sean J. Barnett, MD, MS, Assistant Professor

Andrea Bischoff, MD, Instructor

Rebeccah L. Brown, MD, Associate Professor

Leadership Associate Director, Trauma Services

A. Roshni Dasgupta, MD, MPh, Assistant Professor

Peter Dickie, PhD, Assistant Professor

Richard A. Falcone, MD, MPh, Associate Professor

Leadership Director, Trauma Services

Jason S. Frischer, MD, Assistant Professor

Leadership Director, Extracorporeal Membrane Oxygenation Program

Victor F. Garcia, MD, Professor

Leadership Founding Director, Trauma Services

Mounira Habli, MD, Assistant Professor

Michael A. Helmrath, MD, Professor

Leadership Director of Surgical Research; Surgical Director, Intestinal Rehabilitation Center

Belinda Hsi Dickie, MD, Assistant Professor

Thomas H. Inge, MD, PhD, FACS, FAAP, Professor

Leadership Surgical Director, Surgical Weight Loss Program for Teens; Director, Center for Bariatric Research and Innovation

Todd M. Jenkins, PhD, MPh, Assistant Professor

Leadership Director, Data Coordinator Center

Helen Jones, PhD, Assistant Professor

Sundeep G. Keswani, MD, Assistant Professor

Leadership Surgical Director, Pediatric Advanced Wound Care Service

Marc A. Levitt, MD, Professor

Leadership Director, Colorectal Center

Foong-Yen Lim, MD, Assistant Professor

Leadership Surgical Director, Fetal Care Center of Cincinnati

Jaimie D. Nathan, MD, Assistant Professor

Alberto Pena, MD, Professor

Leadership Founding Director, Colorectal Center

Frederick C. Ryckman, MD, Professor

Leadership Vice President, System Capacity and Perioperative Operations; Director, Pediatric Surgery

Training Program

Gregory M. Tiao, MD, Associate Professor

Leadership Surgical Director, Liver Transplantation; Director, Small Bowel Program; Associate Director, Pediatric Surgery Training Program

Trainees

- **Aaron Garrison, MD**, PL-9, University of North Carolina-Chapel Hill
- **Jason Fisher, MD**, PL-9, New York Presbyterian Hospital-Columbia University

Division Collaboration

Division of Pediatric Surgery - Michael Helmrath » Division of Developmental Biology - James Wells

Characterization of intestinal stem cells during intestinal adaptation and development of intestinal regenerative strategies.

Division of Pediatric Surgery - Michael Helmrath » Division of Gastroenterology, Hepatology and Nutrition - Noah Shroyer

Characterization of intestinal stem cells during intestinal adaptation and development of intestinal regenerative strategies.

Division of Pediatric Surgery - Jason Frischer » Division of Oncology - Timothy Cripe

Exploring the growth and development of blood vessels in a tumor environment to try to develop novel cancer therapies to overcome tumor resistance to the classic treatments.

Division of Pediatric Surgery - Jason Frischer » Division of Gastroenterology, Hepatology and Nutrition - Lee Denson

Treating well established murine models of colitis with antianiogenic agents to provide new treatments for the managing of Crohn's disease and ulcerative colitis.

Division of Pediatric Surgery - Thomas Inge/Todd Jenkins/Stavra Xanthakos » Division of Pathology - BioBank

Collection of biological specimens from obese patients and lean comparison patients seeking surgical care at Cincinnati Children's Hospital Medical Center (CCHMC). Provide a long-term repository of such biological specimens and collect sufficient demographic information, anthropometric information, past medical history, surgical information, and clinical test results to permit selection of specimens to be used in hypothesis-driven research studies. These specimens are available to qualified researchers at CCHMC, or other institutions with IRB approved studies aimed at better understanding the biology of pediatric obesity and related disorders.

Division of Pediatric Surgery - Thomas Inge » Division of Biomedical Informatics

Collaborative effort to design and maintain the website and web registry site for the International Registry for Hypothalamic Obesity Disorders.

Division of Pediatric Surgery - Thomas Inge » Division of Biomedical Informatics

Collaborative effort to design and maintain the secure web portal used for the adjudication process of the Teen-LABS study.

Division of Pediatric Surgery - Thomas Inge/Todd Jenkins » Division of Gastroenterology, Hepatology and Nutrition - Stavra Xanthakos

1. Explore biological determinants of Steatohepatitis after adolescent bariatric surgery. 2. Pilot project will expand upon preliminary data from pre-clinical animal studies that demonstrate a correlation of a novel serum

biomarker, Coenzyme Q, with fibrosis progression in a murine nonalcoholic steatohepatitis (NASH) model. 3. Relationship of ultra-structural mitochondrial changes with histological severity and subtypes of pediatric NAFLD and NASH.

Division of Pediatric Surgery - Thomas Inge » Division of Gastroenterology, Hepatology and Nutrition - Senad Divanovic

Explore the role of IL-17 in NAFLD development and progression in obese adolescents to devise novel preventive and therapeutic strategies for NAFLD.

Division of Pediatric Surgery - Thomas Inge/Todd Jenkins » Division of Gastroenterology, Hepatology and Nutrition - Rohit Kohli

Pilot study to correlate bile acid levels in serum to the reduction in weight in post-bariatric surgery in adolescents.

Division of Pediatric Surgery - Thomas Inge/Todd Jenkins » Heart Institute - Healthworks

Locating non-operative cohort of patients who have been out of the Surgical Weight Loss Program for Teens, as well as Healthworks for 5 or more years to recruit for a follow-up study to obtain height, weight, and blood samples for analysis.

Division of Pediatric Surgery - Thomas Inge/Todd Jenkins » Division of Behavioral Medicine and Clinical Psychology - Meg Zeller

Teen View,Teen-View2, TeenView 3 looking at risk behaviors in the Teen-LABS cohort.

Division of Pediatric Surgery - Thomas Inge/Todd Jenkins » Division of Social Services - Payal Sawhney

Support group effect in a weight-loss-surgery cohort. This study will help understand how a structured and well organized family support group improves the amount of weight loss achieved by patients who are undergoing weight-loss surgeries.

Division of Pediatric Surgery - Thomas Inge/Todd Jenkins » Division of Nephrology - Nianzhou Xiau

The objective of the present study is to describe the prevalence of kidney abnormalities in severely obese children, and to evaluate risk factors for kidney abnormalities in severely obese children using the TEEN-LABS baseline status.

Division of Pediatric Surgery - Thomas Inge/Todd Jenkins » Division of Endocrinology - Janet Chuang

Assessment of appetite regulatory peptides following gastric bypass surgery in adolescents.

Division of Pediatric Surgery - Thomas Inge/Todd Jenkins » Division of General & Community Pediatrics - Heidi Kalkwarf

Assessment of body composition via dual-energy X-ray absorptiometry (DEXA) in adolescents undergoing bariatric surgery.

Division of Pediatric Surgery - Thomas Inge/Todd Jenkins » Division of Biostatistics & Epidemiology - Rachel Akers

Data collection and management collaboration for the Teen-LABS, FABS, and FABS 5+ studies.

Division of Pediatric Surgery - Thomas Inge/Todd Jenkins » Division of Pulmonary Medicine - Narong Simakajornboon

Effect of obesity duration on obstructive sleep apnea syndrome (OSAS) severity and sleep quality in morbidly obese patients with OSAS.

Division of Pediatric Surgery - Thomas Inge/Todd Jenkins » Division of Behavioral Medicine and Clinical Psychology - Avani Modi

Multi-method measurement of adherence to vitamin supplementation in adolescents undergoing bariatric

surgery.

Division of Pediatric Surgery - Thomas Inge/Todd Jenkins » Clinical and Translational Research - Andrea Ferris

Clinical research coordinator support for the FABS 5+ study.

Division of Pediatric Surgery - Marc Levitt » Division of Pulmonary Medicine - Clinical - John Clancy

CFTR gene and its role in constipation in patients with CF. Specimens from colorectal cases are being analyzed for this funded project.

Division of Pediatric Surgery - Sean Barnett » Division of Adolescent Medicine - Jennifer Hillman

Awaiting results from a center wide survey in regards to work life balance.

Division of Pediatric Surgery - Jaimie Nathan » Division of Gastroenterology, Hepatology and Nutrition - Jorge Bezerra

Studying the role of the gut microbiome in the modulation of liver injury and cholangiopathies, which can progress to end-stage liver disease.

Division of Pediatric Surgery - Peter Dickie/Belinda Hsi Dickie » Division of Pediatric Otolaryngology - Alexander Osborn

Identify altered patterns of expression in lymphatic-determining transcription factors associated with lymphatic malformations.

Division of Pediatric Surgery - Peter Dickie/Belinda Hsi Dickie » Division of Pediatric Surgery - Jason Frischer

Explore lymphangiogenesis in the context of colitis.

Grants, Contracts, and Industry Agreements

Grant and Contract Awards		Annual Direct
FALCONE, R		
Traumatic Brain Injury Symptom Screening and Resolution		
Ohio Department of Public Safety		
	07/01/11-06/30/12	$79,592
HELMRATH, M		
Mechanisms of Intestinal Stem Cell Expansion Following Resection		
National Institutes of Health		
R01 DK 083325	05/01/10-06/30/14	$183,034
INGE, T		
Metabolic Actions of Antipsychotics on Adipose Tissue Samples from Children and Adolescents		
University of Cincinnati		
	07/01/11-06/30/12	$14,546
Teen Longitudinal Assessment of Bariatric Surgery (Teen-LABS)		
National Institutes of Health		
UM1 DK 072493	09/23/11-08/31/12	$881,391

JENKINS, T

Dietary Intake and Eating Behavior in Adolescents Who Undergo Bariatric Surgery
National Institutes of Health(University of Pennsylvania)

R01 DK 080738	07/01/08-06/30/13	$34,756

Teen Longitudinal Assessment of Bariatric Surgery (Teen-LABS) renewal
National Institutes of Health(University of Cincinnati)

UM1 DK 095710	09/12/11-08/31/16	$430,783

JONES, H

Development of Non-Viral DNA Delivery Systems for Placental Gene Therapy
University of Cincinnati

	07/01/11-06/30/12	$10,500

Insulin-like Growth Factor 1 Gene Therapy; Correction of Placental Insufficiency
National Institutes of Health

K99 HD 068504	04/01/12-03/31/14	$83,813

KESWANI, S

Novel Mechanisms of IL-10 and Hyaluronan in Regenerative Fetal Wound Repair
Wound Healing Foundation

	07/01/11-06/30/12	$15,000

Novel Mechanisms of Regenerative Fetal Wound Repair by IL-10
National Institutes of Health

K08 GM 098831	09/15/11-05/31/15	$116,968

TIAO, G

The Molecular Determinants of Virus Induced Biliary Atresia
National Institutes of Health

R01 DK 091566	04/01/11-03/31/16	$234,580

Current Year Direct	**$2,084,963**

Industry Contracts

AZIZKHAN, R

Healthpoint, Ltd	$20,559

INGE, T

Ethicon Endo-Surgery	$1,924

Current Year Direct Receipts	**$22,483**
Total	**$2,107,446**