Division Data Summary

**Research and Training Details**

- Number of Faculty: 22
- Number of Research Fellows: 5
- Number of Support Personnel: 72
- Direct Annual Grant Support: $1,214,795
- Direct Annual Industry Support: $99,666
- Peer Reviewed Publications: 69

**Clinical Activities and Training**

- Number of Clinical Staff: 18
- Number of Clinical Fellows: 8
- Number of Other Students: 11
- Inpatient Encounters: 3645
- Outpatient Encounters: 12,988

**Significant Publications**


Timely transfer of injured children to pediatric trauma centers (PTCs) that can address their unique needs is important. This study was designed to understand the characteristics of transferred injured children. Despite the advantages of care in trauma centers, a significant number of severely injured children are transferred well beyond 2 hours after injury. This study has demonstrated that this pattern of delayed transfer is a systemic problem occurring among all transferring hospitals regardless of distance or mode of patient transfer and is associated with increased use of imaging before transfer.


The purpose of this study was to evaluate the effect of maternal nifedipine on fetal survival when started 24-48 hours before selective fetoscopic laser photocoagulation (SFLP). In conclusion, maternal nifedipine is associated with improved recipient survival in TTTS that undergoes SFLP. This is the first study to suggest a benefit of adjunctive maternal medical therapy in patients with TTTS who undergo SFLP.

The purpose of this study was to evaluate bone loss in adolescents after Roux-en-Y gastric bypass surgery and to determine the extent to which bone loss was related to weight loss. We hypothesized that adolescents would lose bone mass after surgery and that it would be associated with weight loss. In conclusion, bariatric surgery is associated with significant bone loss in adolescents. Although the predicted bone density was appropriate for age 2 years after surgery, longer follow-up is warranted to determine whether bone mass continues to change or stabilizes.


Cloacal malformations represent the most complex of genitourinary/anorectal anomalies. We have encountered a unique group of complications in referred patients after failed attempted repairs elsewhere and chose to review this experience with the hope of identifying pitfalls to avoid during the primary repair. We have observed key complications requiring reoperation in a large series of cloacal malformations that are potentially avoidable. A persistent urogenital sinus can be avoided by properly diagnosing a cloaca and repairing the entire malformation and not just the rectum during the initial repair. Vaginal and urethral complications occurred mainly in patients with a common channel longer than 3 cm. Repair of cloacas with common channels longer than 3 cm requires familiarity with a complex decision-making process, and atresias, strictures, and fistulae can be avoided with adequate mobilization of structures and preservation of blood supply. Rectal prolapse occurrence relates to the quality of the perineal muscles. Reoperations can restore the anatomy, but the functional results are not as good as those achieved after primary repair.


The purpose of the study was to develop a prediction rule regarding the factors that most accurately predict the diagnosis of a malignancy in a lung nodule in the pediatric oncology patient. In conclusion, lesions that are between 5 and 10 mm in size and peripherally located in patients with osteosarcoma, Ewing sarcoma, or hepatocellular carcinoma are most likely to be malignant. Use of a prediction rule can help guide clinical practice by determining which patients should undergo surgical resection of lung nodules and which patients may be closely observed with continued radiologic studies.

**Division Highlights**

**Molecular Fetal Lab - Timothy Crombleholme, MD**

Dr. Crombleholme has expertise in wound healing and fetal cellular and molecular therapeutics research. Dr. Crombleholme is the Director, Surgical Research and Associate Chair of the Children’s Hospital Research Foundation and the Medical Director of the Fetal Care Center.

**Solid Organ Cancers - Jason Frischer, MD**

Dr. Frischer is continuing his basic science research to study solid organ cancers by identifying, and then overcoming, the mechanisms by which they become resistant to current therapies. Dr. Frischer is the ECMO Director. He intends on applying for a K08 in the fall of 2011.

**Intestinal Rehabilitation - Michael Helmrath, MD**

Dr. Helmrath has expertise in intestinal rehabilitation. His basic science research continues to focus on
intestinal failure and intestinal stem cells. He is studying the mechanisms of intestinal stem cell expansion following resection. His research will help better understand how the cells that continually renew the lining of the intestine every day (intestinal stem cells) increase in number to help compensate following intestinal loss. His research continues to be funded by the NIH as an R01. He has submitted a second R01 which is pending.

Bariatric Surgery - Thomas Inge, MD
The Center for Bariatric Research and Innovation directed by Dr. Inge continues to partner with NIDDK and lead the national effort to prospectively gather data and publish evidence-based recommendations for use of weight loss surgery in adolescents. The team received a renewal of their NIH U01 funded Teen LABS Study, the largest multicenter study to document outcomes of adolescents undergoing weight loss surgery. In addition to this parent grant, the study group has added numerous other R01-funded ancillary studies to the consortium. Dr. Inge also received ARRA funding for Assessing the Health Benefits and Risks of Adolescent Bariatric patients. He has submitted a NIH Competitive renewal to continues this important research.

Molecular Fetal Therapy - Sundeep Keswani, MD
Dr. Keswani’s is focusing on the molecular mechanisms underlying the fetal regenerative wound healing phenotype. If goals are realized, it 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 currently leading an initiative to create a clinical center of excellence in pediatric wound care. He has submitted his first successful K08 application to the National Institute of Health and is awaiting formal notification of the award.

Biliary Atresia - Gregory Tiao, MD
Dr. Tiao continues to develop his research in biliary atresia. Dr. Tiao received funding on his R01 submission during the past year as he continues his research career progression. Dr. Tiao is the Surgical Director for Liver and Intestinal Transplantation.

Jaimie D. Nathan, MD
Dr. Nathan's research focus is 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 bacterial overgrowth, in which a small bowell 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. He intends on applying for a K08 in the spring of 2012.

Fetal Therapy - Helen Jones, PhD
Dr. Jones is enhancing the research ongoing in the Center for Molecular Fetal Therapy (CMFT) alongside Dr. Habli. Dr. Jones continues to develop distinct research efforts as well as supporting the rest of the CMFT.

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

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

Faculty Members

Daniel von Allmen, MD, Professor
Division Director
Research Interests

Richard G. Azizkhan, MD, Professor
Surgeon-in-Chief
Research Interests

Maria H. Alonso, MD, Associate Professor
Surgical Associate Director, Liver Transplant; Surgical Director, Kidney Transplant
Research Interests

Sean J. Barnett, MD, MS, Assistant Professor
Research Interests

Rebeccah L. Brown, MD, Associate Professor
Associate Director, Trauma Services
Research Interests

Timothy M. Crombleholme, MD, Professor
Obstetrics/Gynecology, and Pediatrics, Director, Fetal Care Center of Cincinnati
Research Interests

A. Roshni Dasgupta, MD, MPh, Assistant Professor
Research Interests

Richard A. Falcone, MD, MPh, Assistant Professor
Director, Trauma Services, Associate Program Director-Fellowship
Research Interests

Jason S. Frischer, MD, Assistant Professor
Director, ECMO Service
Research Interests

Victor F. Garcia, MD, Professor
Director, Trauma Services; Associate Surgical Director, Comprehensive Weight Management Center
Research Interests

Mounira Habli, MD, Assistant Professor
Research Interests

Michael A. Helmrath, MD, Professor
Research Interests

Thomas H. Inge, MD, PhD, Associate Professor
  Surgical Director, Comprehensive Weight Management Center

Research Interests

Todd M. Jenkins, PhD, Assistant Professor

Research Interests

Helen Jones, PhD, Assistant Professor

Research Interests

Sundeep G. Keswani, MD, Assistant Professor

Research Interests

Marc A. Levitt, MD, Associate Professor
  Associate Director, Colorectal Center for Children, Associate Program Director Fellowship

Research Interests

Foong-Yen Lim, MD, Assistant Professor

Research Interests

Jaimie D. Nathan, MD, Assistant Professor

Research Interests

Alberto Peña, MD, Professor
  Director, Colorectal Center for Children

Research Interests

Frederick C. Ryckman, MD, Professor
  Surgical Director, Liver Transplant; Clinical Director

Research Interests

Gregory M. Tiao, MD, Associate Professor
  Associate Program Director, Fellowship

Research Interests

Trainees

- Mubeen Jafri, MD, PL-9, University of Cincinnati
- Jason Fisher, MD, PL-8, New York Presbyterian Hospital-Columbia Univeristy

Significant Accomplishments

Intestinal Rehabilitation

Michael Helmrath, MD, has expertise in intestinal rehabilitation. His basic science research continues to focus on intestinal failure and intestinal stem cells. He is studying the mechanisms of intestinal stem cell expansion following resection. His research is funded by the National Institutes of Health as an R01. Also, he has submitted a second R01 that is pending. His research will help better understand how the cells (intestinal stem cells) that renew the lining of the intestine every day increase in number to help compensate following intestinal loss.

Bariatric Surgery

Thomas Inge, MD, PhD, directs the Center for Bariatric Research and Innovation, which 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. He has submitted a competitive renewal to continue this important research.

**Wound Healing**

Sundeep Keswani, MD, is focusing on the molecular mechanisms underlying the fetal regenerative wound healing phenotype. If goals 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 leading an initiative to create a clinical center of excellence in pediatric wound care. He has submitted his first K08 application to the National Institutes of Health.

**Biliary Atresia**

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**Division Publications**

68. Young LR, Brody AS, Inge TH, Acton JD, Bokulic RE, Langston C, Deutsch GH. Neuroendocrine cell


Grants, Contracts, and Industry Agreements

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<tr>
<th>Grant and Contract Awards</th>
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<td><strong>CHERNOGUZ, A</strong></td>
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| Role of EGFR Inhibition in Anti-VEGF Therapy Resistant Neuroblastoma Model  
University of Cincinnati | 01/01/11-12/31/11 $5,000 |
| **FALCONE, R**           |                                      |
| Teen Restraint  
Ohio Department of Public Safety | 10/01/10-09/30/11 $41,038 |
| Evaluation of Pediatric Trauma Triage Criteria for Highest Activation  
Ohio Department of Public Safety | 07/01/10-06/30/11 $43,015 |
| **VANDERSALL, A**        |                                      |
| Use of Antiangiogenic Therapy to Suppress Inflammation in Colitis  
Crohn's & Colitis Foundation of America | 06/15/2011-08/15/2011 $2,500 |
| **HELMRATH, M**          |                                      |
| Mechanisms of Intestinal Stem Cell Expansion Following Resection  
National Institutes of Health | R01 DK 083325 05/01/10-06/30/14 $312,745 |
| **INGE, T**              |                                      |
| Adolescent Bariatrics: Assessing Health Benefits & Risks  
National Institutes of Health | U01 DK 072493 05S2 07/01/10-06/30/11 $198,063 |
| Adolescent Bariatrics: Assessing Health Benefits & Risks  
National Institutes of Health | U01 DK 072493 05S1 07/01/10-06/30/11 $222,963 |
| **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 $34,078 |
| **KESWANI, S**           |                                      |
| Novel Mechanisms of Regenerative Fetal Wound Repair by IL-10  
Association for Academic Surgery | AAS 2011 Roslyn Award 03/01/11-02/28/12 $35,000 |
| **TIAO, G**              |                                      |
| The Molecular Determinants of Virus Induced Biliary Atresia  
National Institutes of Health |                                      |
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**Current Year Direct** $1,214,795

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**Current Year Direct Receipts** $99,666

| Total | $1,314,461 |