Division Photo


Division Data Summary

<table>
<thead>
<tr>
<th>Research and Training Details</th>
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<tbody>
<tr>
<td>Number of Faculty</td>
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<td>Number of Joint Appointment Faculty</td>
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<tr>
<td>Number of Research Fellows</td>
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<tr>
<td>Direct Annual Grant Support</td>
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<tr>
<td>Peer Reviewed Publications</td>
<td>24</td>
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<table>
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<tr>
<th>Clinical Activities and Training</th>
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<tr>
<td>Number of Clinical Staff</td>
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<tr>
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<tr>
<td>Inpatient Encounters</td>
<td>8,729</td>
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Significant Publications


This manuscript further established that liver injury following hemorrhagic shock is dependent on developmental age, which has important implications for the development of age specific therapies.


This manuscript demonstrated for the first time that PPAR-gamma activation occurs in the blood compartment of children with septic shock. Coupled with a wealth of other experimental data from the Divisional laboratories, these clinical data have provided the foundation for an FDA application to conduct a Phase 1 pharmacologic trial of PPAR-
gamma activation in children with septic shock


This manuscript has provided clear financial data documenting the potential substantial cost savings that can be achieved by reducing catheter related blood stream infections in the PICU. A major quality initiative in the PICU is the reduction of nosocomial catheter related blood stream infections.


This manuscript demonstrated a protective role of Toll like receptor 2 and matrix metalloendopeptidase 9 in mice with experimental acute allergic airway inflammation. The data may have important implications for allergen induced astha.


This manuscript demonstrated the existence of sub-classes of children with septic shock based exclusively on gene expression profiles generated during the first 24 hours of admission to the PICU. One of the expression based subclasses has a significantly higher level of illness severity and a higher mortality rate, thus providing the opportunity to risk stratify patients early in the course of septic shock.

Division Highlights

Kristen Page, Ph.D.

Dr. Page received one of two Schmidlapp Scholar Awards from the Firth Third Bank/Charlotte R. Schmidlapp Women Scholars Program in fiscal year 2010

Jennifer M. Kaplan, MD, MS

Dr. Kaplan was awarded a Mentored Clinical Scientist Development Award from the National Institute of General Medical Sciences

Hector R. Wong, MD

Dr. Wong was awarded a Challenge Grant from the National Heart, Lung, and Blood Institute to develop a multi-biomarker based pediatric sepsis risk model.

Faculty Members

Hector Wong, MD, Professor; Director
Research Interests: Septic shock, Genomics, Biomarkers

Eman Al-Khadra, MD, Assistant Professor
Research Interests: Bacterial Pneumonia

Richard Brilli, MD, Professor Clinical
Research Interests: Quality Improvement BSI, VAP

Ranjit Chima, MD, Research Assistant Professor; Lung injury/inflammation/Hemorrhagic Shock
Research Interests: Lung Injury/Inflammation, Hemorrhagic Shock

Lesley Doughty, MD, Associate Professor; Fellowship Director
Research Interests: Sepsis

Jennifer Kaplan, MD, Assistant Professor
Research Interests: Sepsis

Kristen Page, PhD, Associate Professor
Research Interests: Asthma, airway inflammation, inflammatory mediators

Sue E. Poynter, MD, Assistant Professor; Medical Director Division of Respiratory Care;
Research Interests: Acute lung injury, resident education

Ken Tegtmeyer, MD, Associate Professor Clinical
Research Interests: Multimedia Medical Education

Derek S. Wheeler, MD, Assistant Professor Clinical; Clinical Director
Research Interests: Sepsis, Stress preconditoning, Quality Improvement
Trainees

- Jeffrey Nowak, PL-9, University of Minnesota
- Erika Stalets, PL-8, University of Tennessee Health Sciences Center
- Scottie Day, PL-7, Indiana University
- Elizabeth Mack, PL-6, Palmetto Richland University
- Donna Claes, PL-5, CCHMC & University of Missouri
- Rodney Daniels, PL-5, Albany Medical Center
- Derrick Dauplaise, PL-5, CCHMC & University of South Florida
- Sarah Norris, PL-5, Medical College of Georgia
- Stephen Standage, PL-4, Childrens Hospital of Philadelphia
- Sandeep Tripathi, PL-4, Suny Downstate
- Erik Mikkelsen, PL-5, Children's Mercy Hospital

Significant Accomplishments

Improving outcomes

Our 35-bed Pediatric Intensive Care Unit (PICU) provides care for more than 2,000 critically ill infants and children per year. This year, the standardized mortality ratio for the PICU, which compares actual deaths to a predicted number of deaths based on severity-of-illness adjustment, showed that our death rate was lower than predicted, ranging between 0.4 and 1. In addition, our rates of catheter-associated blood stream infections and ventilator-associated pneumonia consistently rank among the lowest in the country.

Medical response team

Our division also made strides in preventing other critical events. The hospital-wide medical response team (MRT) was activated 265 times this year, an all-time high for the medical center. As a result, there has been only 1 MRT-preventable code at Cincinnati Children’s since mid-2007. We remain closely involved with the situational awareness initiative, which has significantly reduced the rate of unplanned critical transfers to the PICU.

Dr. Barr joins the team

This year, we welcomed Frederick (Rick) Barr, MD, MSCI, to our division. Barr served as director of Pediatric Critical Care Medicine at Vanderbilt University since 2007. At Cincinnati Children's, he will serve as program director for the Clinical Translational Research Center at Cincinnati Children's and will be charged with expanding clinical research efforts within the PICU.

Division Publications

1. :

Grants, Contracts, and Industry Agreements

Grant and Contract Awards

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<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Institution</th>
<th>Start Date</th>
<th>End Date</th>
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<th>Direct 2</th>
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<tr>
<td>Barr, F</td>
<td>Cincinnati Center for Clinical &amp; Translational Sciences and Training - CTRC</td>
<td>University of Cincinnati (National Institutes of Health)</td>
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<td>Chima, R</td>
<td>C-peptide: A Novel Anti-Inflammatory Peptide Inhibitor</td>
<td>Shock Society</td>
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### Interferon-Mediated Reprogramming of Toll-like Receptor Signaling
**National Institutes of Health**
**R01 GM 085063**  
08/01/08 - 05/31/13  
$188,100 / $944,300

### PPAR gamma in Pediatric Sepsis and the Inflammatory Response in Obesity
**National Institutes of Health**
**K08 GM 093135**  
06/01/10 - 05/31/14  
$115,250 / $461,000

### The Immunomodulatory Effects of Extracellular HSP 70
**National Institutes of Health**
**K08 GM 077432**  
04/01/08 - 03/31/11  
$112,500 / $450,000

### The Host Response to Calfactant for Direct Acute Lung Injury in Critically Ill Children
**National Institutes of Health**
**R03 HD 058246**  
07/01/08 - 06/30/10  
$50,000 / $100,000

### Therapeutic Hypothermia after Pediatric Cardiac Arrest
**University of Michigan (National Institutes of Health)**
**U01 HL 094345**  
09/01/09 - 06/30/14  
$28,378 / $145,424

### Therapeutic Hypothermia after Cardiac Arrest
**University of Michigan (National Heart, Lung & Blood Institute)**
**U01HL094345**  
09/01/2009 - 08/31/2014  
$5,236 / $172,115

### Genomic Analysis of Pediatric SIRS and Septic Shock
**National Institutes of Health**
**R01 GM 064619**  
09/01/07 - 08/31/11  
$223,551 / $664,447

### Point of Care Center for Emerging Neurotechnologies
**University of Cincinnati (National Institutes of Health)**
**U54 EB 007954**  
07/01/09 - 06/30/10  
$12,572 / $12,572

### Pediatric Sepsis Biomarker Risk Model
**National Institutes of Health**
**RC1 HL 100474**  
09/30/09 - 08/31/11  
$333,300 / $666,362

### Genomic Analysis of Pediatric SIRS and Septic Shock
**National Institutes of Health**
**R01 GM 064619**  
09/30/2009 - 08/31/2011  
$236,275 / $236,275

### Mechanisms of Age-Related Inflammatory Response in Hemorrhagic Shock
**National Institutes of Health**
**R01 AG 027990**  
09/01/2007 - 08/31/2012  
$200,900 / $1,008,600

### PPARgamma and PPARgamma Agonists in Septic Shock
**National Institutes of Health**
**R01 GM 067202**  
07/01/2008 - 06/30/2012  
$247,080 / $983,378

### Role of Eicosanoids in Shock
**Medical University of South Carolina (National Institutes of Health)**
**R01 GM 027673**  
07/03/2008 - 06/30/2013  
$24,317 / $48,878

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