

Division of Critical Care Medicine

DIVISION PROFILE	
Number of Faculty	11
Number of Fellows	
Clinical Fellows	8
Number of Graduate Students	1
Number of Other Students (full and part-time)	2
Number of Support Personnel	21
Annual Total Grant Support (direct)	\$1,643,747
Annual Total Industry Contracts (direct)	\$176,097
Number of Peer Reviewed Publications	14
Patient Encounters	
Inpatient	6,883

FACULTY LISTING

Hector Wong, MD, Associate Professor of Pediatrics, Division Director
George Benzing, III, MD, Professor of Pediatrics Emeritus
Richard Briilli, MD, Professor of Clinical Pediatrics, Associate Chief of Staff; Clinical Director, Pediatric Intensive Care Unit; Medical Director, Patient Transport Services
Lesley Doughty, MD, Associate Professor of Clinical Pediatrics
Paul Gardner, PhD, Research Assistant Professor of Pediatrics
Brian Jacobs, MD, Professor of Clinical Pediatrics, Director, Technology and Patient Safety
Neil Kooy, MD, Associate Professor of Clinical Pediatrics, Fellowship Director
Kristen Page, PhD, Research Assistant Professor of Pediatrics
Sue Poynter, MD, Research Instructor of Pediatrics
Derek Wheeler, MD, Assistant Professor of Clinical Pediatrics
Basilia Zingarelli, MD, PhD, Research Associate Professor of Pediatrics

OVERVIEW

The Division of Critical Care Medicine provides comprehensive and state of the art clinical care for all critically ill children admitted to Cincinnati Children's Hospital Medical Center (CCHMC). In-house coverage and consultation is available 24 hours per day. The Pediatric Intensive Care Unit (PICU) consists of 25 intensive/intermediate care beds, all of which are located on the 6th floor of the hospital tower. In addition, the Division of Critical Care Medicine administers all transports to and from CCHMC. Staff from the Division of Critical Care Medicine also provides medical coverage for the Cardiac Intensive Care Unit at CCHMC.

All medical patients admitted to the PICU are primarily managed by members of the Division of Critical Care Medicine. We actively seek consultation and co-management strategies with other medical subspecialty groups at CCHMC and community physicians. Surgical patients admitted to the PICU are co-managed by members of the Division of Critical Care Medicine and the respective surgical services. We serve a diverse group of patients and are capable of expertly providing advanced support for all forms of organ system failure including respiratory, cardiovascular, neurologic, hepatic, renal, and hematologic failure.

The Division of Critical Care Medicine has active and productive research programs in both basic science and clinical science. All clinical faculty members have active research efforts in either basic science research or clinical research. In addition, there are three, PhD-level, full-time research faculty within the division, and 12 research support personnel. Our basic research approaches range from molecular biology to large animal physiology to drug development. Specific basic research programs and interests include lung inflammation, immune modulation, ischemia-reperfusion, nitric oxide biochemistry, pulmonary hypertension, and heat shock protein biology. Specific clinical research programs and interests include vascular thrombosis, status asthmaticus, respiratory failure, pulmonary hypertension, septic shock, nutrition, and genomics. Research activities are widely supported through various granting agencies and industry contracts.

The Division of Critical Care Medicine has an ACGME-accredited training program in Pediatric Critical Care Medicine. This three to four year program provides subspecialty training for pediatricians seeking certification in Pediatric Critical Care Medicine. The program includes extensive clinical and research training. A portion of the research training is funded through a NIH training grant. Seven fellows are currently in the program, while 15 other fellows have graduated and are currently practicing in major PICUs throughout the country and abroad.



Left to Right: R. Brill, K. Page, D. Wheeler, B. Zingarelli, H. Wong, S. Poynter

HIGHLIGHTS

The last fiscal year was highlighted, again, by a record number of admissions to the pediatric intensive care unit.

Jennifer Kaplan, MD, Research Instructor, joined the faculty in July 2006. She is a graduate of the CCHMC training program in pediatric critical care medicine.

Eman Al-Khadra, MD, Research Instructor, joined the faculty in July 2006. She is a graduate of the Boston Children's Hospital training programs in pediatric critical care medicine and pulmonary medicine.

TRAINING

Michael Bigham, MD	PL-IV	Medical College of Ohio
Elizabeth Galloway, MD	PL-IV	University of South Dakota
John Giuliano, MD	PL-IV	George Washington School of Medicine and Health Sciences
Ranjit Chima, MD	PL-V	Children's Hospital Detroit
Patricia Abboud, MD	PL-VI	Wright State University School of Medicine
Margaret Chase, MD	PL-VI	Ohio State University
Michael Vish, MD	PL-VI	Wayne State University School of Medicine
Jennifer Kaplan, MD	PL-VII	Orlando Regional Healthcare

GRANTS, CONTRACTS AND INDUSTRY AGREEMENTS

Grant and Contract Awards Annual Direct/Project Period Direct

Doughty, L		
Viral Modulation of the Inflammatory Response		
National Institutes of Health		
K08 GM 071568	03/01/05 – 06/30/09	\$111,200/\$488,968
Gardner, P		
Flavo-hemoglobin-Catalyzed Nitric Oxide Dioxygenation		
National Institutes of Health		
R01 GM 065090	07/01/04 – 06/30/06	\$125,000/\$250,000
Jacobs, B		
Pediatric Off-Patent Drugs Study/Center for Lorazepam Sedation		
National Institute of Health (Case Western Reserve University subcontract)		
N01 HD 003367	04/01/05 – 03/31/08	\$138,105/\$316,512
Pediatric Off-Patent Drugs Study/Center for Lorazepam Sedation		
National Institute of Health (Case Western Reserve University subcontract – per patient)		
N01 HD 003367	04/01/05 – 03/31/08	\$97,800/\$293,400
Kaplan, J		
Molecular Epidemiology in Children's Environmental Health		
National Institutes of Health (University of Cincinnati subcontract)		
T32 ES 010957	07/01/05 – 06/30/06	\$51,036
Page, K		
Role of Cockroach Proteases in Airway Inflammation		
National Institutes of Health		
R01 HL 075568	12/15/04 – 11/30/08	\$195,300/\$800,000
Wheeler, D		
The Immunomodulatory Effects of HSP 70		
National Institutes of Health		
K08 GM 077432	04/01/06 – 03/31/11	\$112,250/\$561,250
Wong, H		
The Heat Shock Response and Cytoprotection		
National Institutes of Health		
R01 GM 061723	06/01/03– 05/31/07	\$195,300/\$800,000
Genomic Analysis of Pediatric SIRS		
National Institutes of Health		
R01 GM 064619	08/01/03 – 07/31/06	\$386,958/\$1,155,692

Zingarelli, B		
Role of PPAR and Agonists in Septic Shock		
National Institutes of Health		
R01 GM 067202	07/01/03 – 06/30/07	\$220,000/\$880,000
Role of Eicosanoids in Shock		
National Institutes of Health (Medical University of South Carolina subcontract)		
R01 GM 027673	07/01/04 – 06/30/09	\$10,798/\$63,569
Current Year Direct		\$1,643,747
Industry Contracts		
Jacobs, B		
BD Medical Systems		\$5,130
IRIS		\$15,400
Medegen MaxPlus		\$18,976
Praxair Technology		\$77,301
Siemens		\$57,750
Wheeler, D		
Emory/Egleston Child Hospital		\$1,540
Current Year Direct Receipts		\$176,097
TOTAL		\$1,995,941

PUBLICATIONS

1. Wesche-Soldato DE, Chung CS, Lomas-Neira J, Doughty LA, Gregory SH, Ayala A. In vivo delivery of caspase-8 or Fas siRNA improves the survival of septic mice. *Blood* 2005;106(7):2295-301.
2. Gardner PR, Gardner AM, Brashear WT, Suzuki T, Hvitved AN, Setchell KD, Olson JS. Hemoglobins dioxygenate nitric oxide with high fidelity. *J Inorg Biochem* 2006;100(4):542-50.
3. Knue M, Doellman D, Jacobs BR. Peripherally inserted central catheters in children: a survey of practice patterns. *J Infus Nurs* 2006;29(1):28-33.
4. Nimah MM, Bshesh K, Callahan JD, Jacobs BR. Infrared tympanic thermometry in comparison with other temperature measurement techniques in febrile children. *Pediatr Crit Care Med* 2006;7(1):48-55.
5. Schilling S, Doellman D, Hutchinson N, Jacobs BR. The impact of needleless connector device design on central venous catheter occlusion in children: a prospective, controlled trial. *JPEN J Parenter Enteral Nutr* 2006;30(2):85-90.
6. Parilla NW, Hughes VS, Lierl KM, Wong HR, Page K. CpG DNA modulates interleukin 1beta-induced interleukin-8 expression in human bronchial epithelial (16HBE14o-) cells. *Respir Res* 2006;7:84.
7. Eghtesady P, Nelson D, Schwartz SM, Wheeler D, Pearl JM, Cripe LH, Manning PB. Heparin-induced thrombocytopenia complicating support by the Berlin Heart. *Asaio J* 2005;51(6):820-5.
8. Bridges JP, Xu Y, Na CL, Wong HR, Weaver TE. Adaptation and increased susceptibility to infection associated with constitutive expression of misfolded SP-C. *J Cell Biol* 2006;172(3):395-407.
9. Lai Y, Du L, Dunsmore KE, Jenkins LW, Wong HR, Clark RS. Selectively increasing inducible heat shock protein 70 via TAT-protein transduction protects neurons from nitrosative stress and excitotoxicity. *J Neurochem* 2005;94(2):360-6.
10. Wong HR. Translation. *Crit Care Med* 2005;33(12 Suppl):S404-6.
11. Wong HR, Dunsmore KE, Page K, Shanley TP. Heat shock-mediated regulation of MKP-1. *Am J Physiol Cell Physiol* 2005;289(5):C1152-8.

12. Kaplan JM, Cook JA, Hake PW, O'Connor M, Burroughs TJ, Zingarelli B. 15-Deoxy-delta(12,14)-prostaglandin J(2) (15D-PGJ(2)), a peroxisome proliferator activated receptor gamma ligand, reduces tissue leukosequestration and mortality in endotoxic shock. *Shock* 2005;24(1):59-65.
13. Okaya T, Blanchard J, Schuster R, Kuboki S, Husted T, Caldwell CC, Zingarelli B, Wong H, Solomkin JS, Lentsch AB. Age-dependent responses to hepatic ischemia/reperfusion injury. *Shock* 2005;24(5):421-7.
14. Zingarelli B. Nuclear factor-kappaB. *Crit Care Med* 2005;33(12 Suppl):S414-6.