

CLIFFORD WALTER BOGUE, M.D.

Associate Professor, Pediatrics
Chief, Critical Care Medicine
Yale University School of Medicine
333 Cedar Street
PO Box 208064
New Haven, CT 06520-8064
Phone: 203-785-4651
Fax: 203-785-5833

EDUCATION

1981 BA, University of Virginia, Charlottesville, VA (Major - Biology)
1985 M.D., University of Virginia, Charlottesville, VA
1985 – 1988 Resident in Pediatrics, Vanderbilt University Medical Center, Nashville, TN
1988 – 1989 Chief Resident in Pediatrics, Vanderbilt University Medical Center, Nashville, TN
1989 – 1993 Post-doctoral Fellow, Department of Pediatrics, Section of Critical Care Medicine, Yale University School of Medicine, New Haven, CT

PROFESSIONAL APPOINTMENTS

1992 – 1993 Consultant in Pediatrics, Yale-New Haven Hospital, New Haven, CT
1993 – 1994 Instructor, Pediatrics (Critical Care Medicine), Yale University School of Medicine, New Haven, CT
1993 – present Director, Pediatric Transport Service, Yale-New Haven Children's Hospital, New Haven, CT
1993 – present Attending Physician, Yale-New Haven Children's Hospital, New Haven, CT
1994 – 2000 Assistant Professor, Pediatrics (Critical Care Medicine), Yale University School of Medicine, New Haven, CT
2000 – 2003 Associate Research Scientist, Pediatrics (Critical Care Medicine) and Yale Child Health Research Center, Yale University School of Medicine, New Haven, CT
2002 – 2003 Co-Director, Postdoctoral Training Grant *Development of Cardiovascular and Pulmonary Function* (T32 HL07272), NHLBI/National Institutes of Health
2002 – 2003 Acting Chief, Section of Critical Care Medicine, Dept. of Pediatrics, Yale University School of Medicine, New Haven, CT
2003 – present Associate Professor, Pediatrics (Critical Care Medicine), Yale University School of Medicine, New Haven, CT
2003 – present Director, Postdoctoral Training Grant *Development of Cardiovascular and Pulmonary Function* (T32 HL07272), NHLBI/National Institutes of Health
2003 – present Director, Pediatric Critical Care Medicine Fellowship Program, Yale University School of Medicine, New Haven, CT.
2003 – present Chief, Section of Critical Care Medicine, Department of Pediatrics, Yale University School of Medicine, New Haven, CT.

HONORS AND AWARDS

1979	<i>Intermediate Honors</i> , University of Virginia, Charlottesville, VA
1981	<i>Degree with Distinction</i> , University of Virginia, Charlottesville, VA
1990	Pediatric Fellow Teaching Award, Department of Pediatrics, Yale University
1994	Young Investigator Award, Eastern Society for Pediatric Research
1994	Child Health Research Fellow, Charles H. Hood Foundation
1995	Parker B. Francis Fellow in Pulmonary Research
1996	Clinical Investigator Development Award (K08), NHLBI/NIH
1997	Member (elected), Society for Pediatric Research
1998	NIH Young Investigator Award, Perinatal Research Society
1998	Child Health Research Fellow, Charles H. Hood Foundation
1998	Member, Yale Liver Center
2000	Mae Gailani Junior Faculty Award, Department of Pediatrics, Yale University School of Medicine, "in recognition of junior faculty whose dedication to research and patient care bespeaks the promise of this department."
2001	Individual Research Award (R01), NIDDK/NIH
2002	Fellow, Berkeley College, Yale University
2002	Member, Yale Diabetes Endocrinology Research Center

RESEARCH GRANTS AWARDED**Current**

1997 – present	NIH/NHLBI, 5 T32 HL07272 <i>The Development of Cardiovascular and Pulmonary Function</i> , Role: Director (2003 – present); Preceptor (1997 – present) Total Direct Costs: \$1,355,706
2001 – 2006	NIH/NIDDK R01-DK061146 <i>Hex – a Homeobox Gene Essential for Liver Development</i> Role: Principal Investigator Total Direct Costs: \$1,250,000

Expired

1994 – 1996	Charles H. Hood Foundation <i>Expression and Regulation of Homeobox Genes in the Developing Lung</i> Role: Principal Investigator Total Award - \$50,000
1995 – 1996	Parker B. Francis Foundation <i>Developmental Regulation and Expression of Hex in the Lung</i> Role: Principal Investigator Total direct support - \$35,000 (Relinquished early due to receipt of K08 award)

RESEARCH GRANTS AWARDED (continued)

- 1995 – 1997 National Institute of Health Child Health Research Center
Developmental Adaptation, (PI – J.B. Warshaw)
Project Title: *Hex Expression and Regulation in the Developing Lung*
Role: Co-Investigator
Total direct support - \$60,000
- 1996 – 2001 National Institute of Health, 5 K08 HL03471
Hex Expression and Regulation in the Developing Lung
Role: Principal Investigator
Total direct support - \$507,870
- 1997 – 1999 American Lung Association, Basic Research Grant
Hex Expression and Regulation in the Developing Embryo
Role: Principal Investigator
Total Award - \$50,000
- 1998 – 2000 Yale Liver Center Pilot Project (NIDDK P3034989)
Characterization of the Hex Promoter in Liver Cells
Role: Principal Investigator
Total Direct Costs- \$30,000.
- 1998 – 2001 Charles H. Hood Foundation
The Ontogeny of Lymphocyte Development (PI – Joe B. Warshaw)
Project Title: *Hex Function in Lymphocyte Development*
Role: Co-Investigator
Total Direct Costs - \$300,000.
- 2000 – 2001 Yale Liver Center Pilot Project (NIDDK P3034989)
Hex Localization and Function in Liver Development
Role: Principal Investigator
Total Direct Costs - \$15,000.
- 2001 – 2002 American Cancer Society/Institutional Research Grant
The Function of the Homeobox Gene Hex in B-cell Development
Role: Principal Investigator
Total Direct Costs: \$20,000 (Relinquished early due to receipt of R01 award)
- 2002 – 2003 Charles H. Hood Foundation
The Ontogeny of Lymphocyte Development
Role: Co-Investigator
Total Direct Costs - \$225,000.

EDITORIAL EXPERIENCE

Ad Hoc Reviewer

Pediatric Research, American Journal of Physiology: Lung Cellular and Molecular Physiology, American Journal of Respiratory Cell and Molecular Biology, American Journal of Physiology: Gastrointestinal and Liver Physiology, Journal of Experimental Zoology, Atherosclerosis, FEBS Letters, Developmental Dynamics, Journal of Pediatrics

NATIONAL ORGANIZATIONS

American Academy of Pediatrics
American Medical Association
American Thoracic Society
Eastern Society for Pediatric Research
Society for Critical Care Medicine
Society for Pediatric Research
Society for Developmental Biology

BOARD CERTIFICATION

1986 Diplomat, National Board of Medical Examiners
1989 Diplomat, American Board of Pediatrics (recertified 1999)
1993 Diplomat, American Board of Pediatrics, Sub-Board of Pediatric Critical Care Medicine (recertified 2001)

LICENSURE

Connecticut (#031657)

HOSPITAL COMMITTEES

1993 – 1995 Member, Pediatric Quality Assurance Committee
1994 – 1998 Co-chair, Pediatric Code 7 Committee
2001 Sedation Analgesia Council Subcommittee for Pediatric Sedation
2003 – present WP-7 Renovation User's Group

DEPARTMENTAL/UNIVERSITY SERVICE

1997 – 1999 Clinical Tutor, Doctor – Patient Encounter Course
1998 – 2000 Medical Student Thesis Advisor
1998 – 2000 Member, Admissions Committee, Yale University School of Medicine
2000 Member, Committee to Review Basic Science Research, Dept. of Pediatrics
2001 – 2002 Member, Liaison Committee to Pediatric Chairman Search Committee
2002 – present Fellow, Berkeley College, Yale University
2002 – present Freshman Advisor, Berkeley College, Yale University
2002 – present Member, Doctoral Committee (Ph.D. candidate – Erica Herzog, M.D.)

DEPARTMENTAL/UNIVERSITY SERVICE (continued)

2002 – 2004 Chair, Pediatric Respiratory Medicine Faculty Search Committee
 2003 Organizer, 2nd Joe B. Warshaw Developmental Biology Symposium, Yale University School of Medicine
 2004 – present Director, Seminars in Pediatrics: Bedside to Bench, Medical Scientist Training Program

NATIONAL SERVICE

2000 – 2002 Member, American Thoracic Society Program Committee Advisory Group
 2001 – 2004 Member, Pediatric Academic Societies' Program Committee
 2002 – present Member, Eastern Society for Pediatric Research Planning Committee
 2003 – present Member (elected), Council, Eastern Society for Pediatric Research

STUDY SECTIONS

1999 – 2003 Member, NEA-3 Study Section, American Heart Association
 2003 Co-Chair, NEA-3 Study Section, American Heart Association

PAST AND CURRENT TRAINEES**Past Trainees**

Bidyut Ghosh, PhD Training level: Post-doctoral fellow
 Dates of training: 1/01/97 – 12/31/00
 Previous degree: Ph.D., University of Calcutta
 Project: *Hex* expression and function in the developing liver
 Current Position: Assoc Research Scientist, Dept. of Surgery, Johns Hopkins Medical School

Eron Sturm Training level: Undergraduate student, Yale University
 Dates of training: 6/97- 5/98
 Previous degree: none
 Project: *Hhex* expression during development
 Current position: Medical student, Vanderbilt University Medical Center

Rocco Iannucci, MD Training level: Medical student
 Dates of Training: 6/98 – 8/99
 Previous Degree: BA
 Project: *Hex* expression during lung development
 Current Position: Medical Resident

PAST AND CURRENT TRAINEES (continued)

- Gheorghe Ganea, MD Training level: Post-doctoral fellow
Dates of training: 6/98 – 7/00
Previous degree: MD, Institute of Medicine, Bucharest Romania
Project: Transcriptional regulation of *Hhex* in the lung epithelial cells
Current Position: Private medical practice
- William McGrath Training level: Undergraduate student, Yale University
Dates of training: 6/99 – 5/00
Previous degree: none
Project: Expression of *Hhex* during embryonic development
- Haifa Hallaq, PhD Training level: Post-doctoral fellow
Dates of training: 7/01 – 6/03
Previous degree: PhD, Hebrew University, Jerusalem, Israel
Project title: Characterization of *Hhex*^{-/-} cardiovascular phenotype
Current position: Assistant Professor, Vanderbilt University Medical School

Present Trainees

- Rong Cong, MD, PhD Training level: Post-doctoral fellow
Dates of training: 10/02 – present
Previous degrees: MD/PhD, Tongji Medical University, China
Project: Identification of targets of the homeobox gene *Hhex*
- Michael Hunter, Ph.D. Training level: Post-doctoral fellow
Dates of training: 9/03 – present
Previous degree: Ph.D. (Developmental Biology), University of Chicago, Chicago IL
Project: The role and regulation of *Hhex* in liver development
- Xiaobing Jiang, Ph.D. Training level: Post-doctoral fellow
Dates of training: 12/03 – present
Previous degree: Ph.D. (Molecular Biology), University of So. California, Los Angeles, CA
Project: *Hhex* function in cardiovascular development

INVITED LECTURES AND VISITING PROFESSORSHIPS

Pediatric Grand Rounds, Department of Pediatrics, Norwalk Hospital, Norwalk, CT. Lecture title: *Transport and Stabilization of the Critically Ill Child* (1993).

Research Conference, Department of Pediatrics, The University of North Carolina School of Medicine, Chapel Hill, NC. Lecture title: *Homeobox Genes and Lung Branching Morphogenesis* (1993).

Research Conference, Department of Pediatrics, The University of Virginia School of Medicine, Charlottesville, VA. Lecture title: *Homeobox Genes and Lung Branching Morphogenesis* (1993).

Pediatric Grand Rounds, Department of Pediatrics, Stamford Hospital, Stamford, CT. Lecture title: *Transport and Stabilization of the Critically Ill Child* (1993).

Pediatric Grand Rounds, Department of Pediatrics, Waterbury Hospital, Waterbury, CT. Lecture title: *Transport and Stabilization of the Critically Ill Child* (1994).

Pulmonary Lung Biology Research Conference, Department of Internal Medicine, Yale University School of Medicine, New Haven, CT. Lecture title: *Hox Genes and Lung Development* (1996).

Pediatric Grand Rounds, Department of Pediatrics, Yale University School of Medicine, New Haven, CT. Lecture Title: *Pediatric Office Emergencies - Are You Prepared?* (1997).

Connecticut Thoracic Society Annual Lung Research Conference, Southbury, CT. Lecture Title: *Expression of Hox Genes During Lung Morphogenesis* (1998).

Yale Liver Center Research Seminar, Section of Digestive Diseases, Department of Internal Medicine, Yale University School of Medicine, New Haven, CT. Lecture title: *The Role of Hex in Liver Development and Function* (1998).

Visiting Professor, Department of Pediatrics, Vanderbilt University School of Medicine, Nashville, TN (1998).

Chair, Developmental Biology Platform Session, Pediatric Academic Societies International Meeting, New Orleans, LA (1998).

Panel Discussant, *NHLBI Workshop on Molecular Embryology of the Lung*, Bethesda, MD (1998).

Research Conference, Department of Pediatrics, University of Utah School of Medicine, Salt Lake City, UT. Lecture title: *The Function and Regulation of Hex During Development* (1998).

Mammalian Development Seminar, MRC National Institute for Medical Research, The Ridgeway, Mill Hill, London UK. Lecture title: *Hex and Liver Development* (1999).

Visiting Professor, IPOKRATES Post-Graduate Seminar *Contemporary and Experimental Techniques in Cardiorespiratory Support: Basis and Clinical Application*. (1999).

INVITED LECTURES AND VISITING PROFESSORSHIPS (continued)

Connecticut Thoracic Society Annual Lung Research Conference, Rocky Hill, CT. Lecture title: *Expression of the Homeobox Gene Hex During Lung Development* (1999).

Research Conference, Department of Pediatrics, Duke University, Durham, NC. Lecture title: *Hex – One Gene With Many Important Functions During Development* (2000).

Pediatric Grand Rounds, Department of Pediatrics, Yale University School of Medicine, New Haven, CT. Lecture title: *Lung Development – From Mice to Men* (2000).

Pediatric Grand Rounds, Department of Pediatrics, Norwalk Hospital, Norwalk, CT. Lecture title: *Management of Increased Intracranial Pressure* (2000).

Pediatric Grand Rounds, Department of Pediatrics, Bridgeport Hospital, Bridgeport, CT. Lecture title: *ARDS: What's New?* (2001).

Panel Discussant, *Coming To Medicine*, Berkeley College Master's Tea, Yale University, New Haven, CT (2001).

Chair, Critical Care Platform Session, Pediatric Academic Societies International Meeting, Baltimore MD (2002).

Chair, Plenary Session, *Regenerative Medicine – From Stem Cells to Tissues*, Pediatric Academic Societies International Meeting, Baltimore MD (2002).

Plenary Speaker, *Pediatric Clinical Year In Review*, American Thoracic Society International Conference, Atlanta GA. Lecture title: *Embryonic Stem Cells and Their Future in Pediatric Pulmonary and Critical Care Medicine* (2002).

Plenary Speaker, *New Frontiers in Pediatric Critical Care Research*, American Thoracic Society International Conference, Atlanta GA. Lecture title: *Transcriptional Control of Lung and Cardiovascular Development* (2002).

Research Conference, Department of Pediatrics, Baylor College of Medicine, Houston, TX. Lecture title: *Hex – One Gene With Many Important Functions During Development* (2002).

Research Conference, Department of Pediatrics, University of Virginia School of Medicine, Charlottesville, VA. Lecture title: *The Homeobox Transcription Factor Hex is Necessary for Liver and Cardiovascular Development* (2002).

Research Conference, Department of Pediatrics, Vanderbilt University School of Medicine, Nashville, TN. Lecture title: *The Homeobox Gene Hex Plays Multiple Roles During Organogenesis* (2002).

INVITED LECTURES AND VISITING PROFESSORSHIPS (continued)

Invited Speaker, Joseph B. Warshaw Developmental Biology Symposium “The Cardiovascular System – From Development to Disease,” Yale University School of Medicine, New Haven, CT. Lecture title: *The Homeobox Gene Hhex and Cardiovascular Development* (2003).

Plenary Speaker and Chair, *Lung Organogenesis – Vascular and Alveolar Interactions*, Pediatric Academic Societies’ Annual Meeting, San Francisco, CA (2004).

Organizer and Speaker, Educational Workshop *Functional Genomics in the Mouse*, Pediatric Academic Societies’ Annual Meeting, San Francisco, CA (2004).

Research Conference, Department of Internal Medicine (Hematology), Yale University School of Medicine, New Haven, CT. Lecture title: *Hhex – One Gene With Many Functions During Mouse Development* (2004).

Invited Speaker, Department of Anatomy and Cell Biology, Kansas University Medical Center, Kansas City, KS. Lecture title: *The Homeobox Gene Hhex Plays Multiple Roles During Organogenesis* (2004).

PUBLICATIONS**Original Articles**

Bogue CW, Wise JD, Gray GF, and Edwards KM. Antibiotic therapy for cat-scratch disease? *JAMA* 262:813-816, 1989.

Bogue CW, Gross I, Vasavada H, Dynia DW, Wilson CM, and Jacobs HC. Identification of *Hox* genes in newborn lung and the effects of gestational age and retinoic acid on their expression. *Am J Physiol* 266(Lung Cell Mol Physiol 10): L448-L454, 1994.

Landry ML, Fonseca SNS, Cohen S, and **Bogue CW**. Fatal enterovirus type 71 infection: Rapid detection and diagnostic pitfalls. *Pediatr Infect Dis J* 14:1095-1100, 1995.

Bogue CW, Lou LJ, Vasavada H, Wilson CM, and Jacobs HJ. Expression of *Hoxb* genes in the developing mouse foregut and lung. *Am J Respir Cell Mol Biol* 15:163-171, 1996.

Bogue CW, Jacobs HJ, Dynia DW, Wilson CM, and Gross I. Retinoic acid increases surfactant protein mRNA in fetal rat lung in culture. *Am J Physiol* 271(Lung Cell Mol Physiol 15): L862-L868, 1996.

Jacobs HJ*, **Bogue CW***, Pinter E*, Wilson CM, Warshaw JB, and Gross I. Fetal lung mRNA levels of *Hox* genes are differentially altered by maternal diabetes and butyrate in rats. *Pediatr Res* 44:99-104, 1998. *These authors contributed equally to this work.

Ghosh B, Jacobs HC, Wiedemann LM, Brown A, Bedford FK, Nimmakayalu MA, Ward DC and **Bogue CW**. Genomic structure, cDNA mapping and chromosomal localization of the mouse homeobox gene *Hex*. *Mammalian Genome* 10:1023-1025, 1999.

Original Articles (continued)

Denson LA, McClure MH, **Bogue CW**, Karpen SJ and Jacobs HC. HNF3 β and GATA-4 transactivate the liver-enriched homeobox gene, *Hex*. *Gene* 246:311-320, 2000.

Denson LA, Karpen SK, **Bogue CW**, and Jacobs HC. The divergent homeobox gene, *Hex*, is a regulator of the Na⁺- dependent bile acid cotransporter, *ntcp*. *Am J Physiol (Gastro and Liver Physiol)* 279:G347 – G355, 2000.

Bogue CW, Ganea GR, Sturm E, Iannucci R, Jacobs HC. *Hex* expression suggests a role in the development and function of organs derived from foregut endoderm. *Dev Dyn* 219:84 – 89, 2000.

Ghosh B, Ganea GR, Denson LA, Iannucci R, Jacobs HC and **Bogue CW**. Immunocytochemical characterization of murine *Hex*, a homeobox-containing protein. *Pediatr Res* 48:634 – 638, 2000.

Bogue CW, Zhang P.-X., McGrath J, Jacobs HC and Fuleihan RL. Impaired B cell development in mice with a targeted disruption of the homeobox gene *Hex*. *Proc Natl Acad Sci, USA*. 100(2): 556-561, 2003.

Puppin C, D'Elia AV, Pellizzari L, Russo D, Arturi F, Presta I, Filetti S, **Bogue CW**, Denson LA, Damante G Thyroid-specific transcription factors control *Hex* promoter activity. *Nuc Acids Res* 31(7):1845-1852, 2003.

Hallaq H, Pinter E, Enciso J, McGrath J, Zeiss C, Brueckner M, Giordano FJ, Madri J, Jacobs HC, Wilson CM, Vasavada H, **Bogue CW**. A null mutation of *Hhex* results in abnormal cardiac development, defective angiogenesis and elevated VEGF levels. *Development*. In revision.

Djavani M, Topisirovic I, Zapata JC, Sadowska M, Yang Y, Rodas J, Lukashevich IS, **Bogue CW**, Borden KLB, Salvato MS. The proline-rich homeodomain (PRH/HEX) protein is down-regulated in liver during arenavirus infection. *J Virol*. Submitted.

Ganea GR, Ghosh B, Denson LA, Jacobs HC and **Bogue CW**. Lung-specific regulation of the homeobox gene, *Hex*. In preparation.

Review Articles/Invited Papers/Book Chapters

Bogue CW and Lister G. New approaches to diagnosis and therapy in pediatric critical care. *Curr Opin Pediatr* 4:431-436, 1992

Donnelly KM and **Bogue CW**. Use of high frequency and non-conventional ventilation for respiratory failure. *Curr Opin Pediatr* 10:278-283, 1998.

Ganea GR and **Bogue CW**. Pain management and weaning from narcotics and sedatives. *Curr Opin Pediatr* 11:207-212, 1999.

Review Articles/Invited Papers/Book Chapters (continued)

Bogue CW. Genetic models of respiratory tract development – from invertebrates to vertebrates, in Genetic Models in Cardiorespiratory Biology. Haddad GG and Xu T, ed. Marcel Dekker, New York, pp. 59 – 89, 2001.

Bogue CW. Genetic and molecular basis of airway and lung development, in Basic Mechanisms of Pediatric Respiratory Disease. Haddad GG, Abman SH and Chernick V, ed. B. C. Decker, Hamilton, Ontario. pp. 9 – 23, 2002.

Baltimore RS and **Bogue CW.** Bacterial meningitis and septicemia beyond the neonatal period, in Gellis and Kagan's Current Pediatric Therapy. Gellis SS and Kagan BM, ed. W.B. Saunders, Philadelphia, PA. pp. 39 – 44, 2002.

Bogue CW. Functional genomics in the mouse – powerful techniques for unraveling the basis of human development and disease. *J Appl Physiol* 94: 2502 – 2509, 2003.

Lakhani S and **Bogue CW.** Toll-like receptor signaling in sepsis. *Curr Opin Pediatr* 15:278 – 282, 2003.

Abstracts

Bogue CW, Baltimore R, and Lister G. Stress ulcer prophylaxis and bacterial colonization: A prospective study. *Pediatr Res* 31:27A, 1992 (Platform presentation).

Bogue CW, Pinter E, Vasavada H, and Jacobs HC. *Hox* gene expression in the developing lung. *Pediatr Res* 33:44A, 1993 (Platform presentation).

Pinter E, **Bogue CW,** Snow K, and Warshaw JB. *Hox* gene expression in fetal rat lung is altered by maternal diabetes. *Pediatr Res* 33:54A, 1993 (Platform presentation).

Bogue CW, Jacobs HC, Dynia DW, Wilson CM, and Gross I. Retinoic acid modulates surfactant gene expression and lung development in rat lung explants. *Pediatr Res* 35:63A, 1994 (Platform presentation).

Pinter E, **Bogue CW,** Floros J, Jacobs HC, Snow K, and Warshaw JB. Dexamethasone decreases *Hox* gene expression in the fetuses of diabetic rats. *Pediatr Res* 35:74A, 1994 (Platform presentation).

Abstracts (continued)

Bogue CW and Jacobs HC. Expression of the homeobox gene *Hex* in the developing rodent lung. *Clin Res* 42:447A, 1994 (Platform presentation).

Bogue CW and Jacobs HC. Expression of the homeobox gene *Hex* during fetal development. *Pediatr Res* 37:58A, 1995 (Platform presentation).

Abstracts (continued)

Bogue CW, Lou LJ, and Jacobs HC. Expression of *Hoxb* genes in the embryonic foregut and lungs suggests an important role in lung development. *Pediatr Res* 37:59A, 1995 (Platform presentation).

Bogue CW, Lou LJ, and Jacobs HC. *Hoxb* gene expression in the developing foregut and lung. *Am J Respir Crit Care Med* 151:A303, 1995 (Poster presentation).

Bogue CW and Jacobs HC. Expression of the homeobox gene *Hex* in developing lung. *Am J Respir Crit Care Med* 151:A303, 1995 (Poster presentation).

Bogue CW, Jacobs HC, Dynia DW, Wilson CM, and Gross I. Retinoic acid enhances surfactant gene expression. *Pediatr Res* 39:59A, 1996 (Platform presentation).

Gross I, **Bogue CW**, Dynia DW, Wilson CM, and Jacobs HC. Butyrate decreases homeobox gene expression in fetal rat lung in culture. *Pediatr Res* 41:45A, 1997 (Platform presentation).

Bogue CW, Ganea GR, Sturm E, Zhao F, and Jacobs HC. *Hex* expression during development suggests an important role in both gastrulation and organogenesis. *Pediatr Res* 43:45A, 1998 (Platform presentation).

Jacobs HC, Denson T, Karpen S, and **Bogue CW**. The Na⁺-dependent bile acid cotransporter (NTCP) is a putative target gene for the liver-enriched, orphan homeobox protein, *Hex*. *Pediatr Res* 43:102A, 1998 (Platform presentation).

Bogue CW, Ganea GR, Sturm E, Zhao F, and Jacobs HC. Expression of the divergent homeobox gene *Hex* suggests an important role in organogenesis. *Respir Crit Care Med* 157:A23, 1998 (Platform presentation).

Denson LA, Jacobs HC, McClure MH, **Bogue CW**, and Karpen SK. A liver-enriched homeobox protein, *Hex*, trans-activates the rat liver Na⁺/taurocholate cotransporter (NTCP) gene promoter and is downregulated by endotoxin and associated cytokines. *Hepatology* 28:505A, 1998 (Platform presentation).

Denson LA, Ghosh B, McClure MH, **Bogue CW**, Karpen SJ and Jacobs HC. Multiple factors regulate the promoter region of the liver-enriched orphan homeobox protein, *Hex*. *Pediatr Res* 45:110A, 1999 (Platform presentation).

Bogue CW, Ganea GR, Ghosh B, Iannucci R and Jacobs HC. *Hex* expression and regulation in the lung. *Dev Biol* 210:213, 1999 (Poster presentation).

Denson L, Ghosh B, McClure M, **Bogue CW**, Karpen S, and Jacobs HC. HNF3 β and GATA-4 transactivate the liver-enriched homeobox gene, *Hex*. *Hepatology* 30:393A, 1999 (Platform presentation).

Ghosh B, Ganea GR, Jacobs HC and **Bogue CW**. Localization of Hex protein in developing mouse embryo. *Pediatr Res* 47: 68A, 2000 (Platform presentation).

Abstracts (continued)

Ganea GR, Ghosh B, Denson LA, Jacobs HC and **Bogue CW**. Lung specific regulation of the homeobox gene, *Hex*. *Respir Crit Care Med* 161:A733, 2000 (Poster presentation).

Ghosh B, Ganea GR, Jacobs HC and **Bogue CW**. Immunocytochemical localization of Hex in cultured cells and mouse embryo. *Dev Biol* 222:276, 2000 (Poster presentation).

Bogue CW, Wilson C, Vasavada H, and Jacobs HC. The homeobox gene *Hex* is necessary for liver development. *Pediatr Res* 49:189A, 2001 (Platform presentation).

Bogue CW, Wilson CM, Vasavada H, and Jacobs HC. The homeobox gene *Hex* is necessary for liver and lung development. *Dev Biol* 235:203, 2001 (Poster presentation).

Hallaq H, Wilson CM, Vasavada H, Brueckner M, and **Bogue CW**. The homeobox gene *Hex* is required for normal cardiovascular development. Poster presented at 2002 Keystone Conference Molecular Biology of the Heart.

Fuleihan RI, Zhang P.-X., McGrath J, Jacobs HC, and **Bogue CW**. Impaired B cell development and function in mice with a targeted disruption of the homeobox gene *Hex*. *Pediatr Res* 51:11A, 2002 (Platform presentation).

Bogue CW, Hallaq H, Brueckner M, Wilson CM, Vasavada H. The homeobox gene *Hex* is required for normal cardiovascular development. *Pediatr Res* 51:30A, 2002 (Platform presentation).

Hallaq H, Wilson CM, Vasavada H, **Bogue CW**. The role of *Hex* in embryonic myocyte development and function. *Pediatr Res* 2003, (Platform presentation).