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## ***CURRICULUM VITAE***

Hubert O. Ballard, M.D.

Associate Professor, Special Title Series  
Department of Pediatrics  
Division of Neonatology  
University of Kentucky College of Medicine  
UK HealthCare

### **I. GENERAL INFORMATION**

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#### **Professional Licensure**

7/1997-current      **Kentucky Medical License**  
#33261  
7/1998-current      **Drug Enforcement Agency Controlled Substance Registration**  
#BB5758595

#### **Board Certification**

10/2000-10/2007      **American Board of Pediatrics**  
Diplomat, General Pediatrics (certificate # 069276)  
11/2005-11/2025      Diplomat, Neonatal-Perinatal Medicine (certificate # 4154)

2000-2010              **American Board of Internal Medicine**  
Diplomat, General Internal Medicine (certificate # 201407)

### **II. EDUCATION**

#### **Undergraduate**

8/1986-5/1992      **University of Kentucky**  
Lexington, Kentucky  
Bachelors of Science, Electrical Engineering

#### **Professional/Graduate**

8/1992-5/1996      **University of Kentucky Medical School**  
Lexington, Kentucky  
Medical Doctor Degree

**Post-Graduate**

9/10/2007-9/15/2007      **Children’s National Medical Center**  
Washington, DC  
Extracorporeal Membrane Oxygenation Training Course

2/2011-10/2011      **University of Kentucky Gatton College of Business and Economics**  
Lexington, Kentucky  
Healthcare Executive Leadership and Management Program  
9/2023-11/2023      Executive Coaching with Brown University/ACT

**Continuing**

6/7/2008-current      **University of Kentucky College of Medicine**  
Lexington, Kentucky  
Neonatal Resuscitation Program Instructor (NRP ID# 604-9688)

**III. PROFESSIONAL EXPERIENCES**

7/1996-6/2000      **University of Kentucky College of Medicine**  
Lexington, Kentucky  
Residency in Internal Medicine and Pediatrics  
7/2000-6/2001      Pediatric Chief Resident  
7/2001-6/2004      Fellowship in Neonatology

**IV. ACADEMIC APPOINTMENTS**

7/2004-6/2011      **University of Kentucky College of Medicine**  
Lexington, Kentucky  
Assistant Professor of Pediatrics, Special Title Series  
7/2011-present      Associate Professor of Pediatrics, Special Title Series

5/2023-present      **University of Kentucky College of Engineering**  
Associate Professor of Biomedical Engineering, Special Title Series

## V. HOSPITAL APPOINTMENTS

	<b>University of Kentucky Medical Center</b>
	Department of Pediatrics, Kentucky Children's Hospital
10/2007-2010	Neonatal ECMO Co-Director
7/2010-6/2018	Medical Director of ECMO
10/2013-5/2015	Associate Medical Director of the NICU
6/2018-6/2022	Kentucky Children's Hospital Director of ECMO

## VI. CONSULTING ACTIVITIES

### Local

**University of Kentucky Medical Center**  
Lexington, Kentucky  
Referral physicians in Eastern and Central Kentucky  
UK Department of Pediatrics  
UK Department of Obstetrics and Gynecology (Division of Maternal-Fetal Medicine)

## VII. TEACHING ACTIVITIES

### University Faculty

	<b>University of Kentucky Medical Center</b>
	Lexington, Kentucky
7/2003-6/2012	Pediatric Intern Orientation to the NICU: Coordinated and developed an orientation manual and lecture series covering critical NICU topics, which included the following: NICU policies, infection control, duty hours, responsibilities, admit orders and notes, daily notes and pre-rounding, discharge notes, on-call responsibilities, NRP review (bag-mask ventilation and intubation), mechanical ventilation and blood gas evaluation, fluid and electrolytes, hypoglycemia, feeding intolerance vs. NEC, sepsis evaluation, nutrition: TPN and feeding practices. This was performed 6-8x/year for all Pediatric, Internal medicine/Pediatric and Triple board interns.
7/2004-2/2014	Neonatology Advanced Life Support Instructor: participate in the certification of all pediatric residents to NALS.
7/2004-6/2012	Pediatric Intern Procedure Lab: Hands-on learning of chest placement, umbilical line placement, and neonatal x-ray evaluation. This was performed 6-8x/year for all Pediatric, Internal medicine/Pediatric, Triple board interns, and Neonatal Transport Nurses.
7/2004-current	Daily bedside teaching for neonatal fellows, pediatric residents rotating in NICU, third (M3) and fourth (M4) year medical students, physician assistant residents and nurse practitioner students.
2/2006-2/2008	NICU Nursing Orientation: Taught NICU nursing staff the basics of lung development, respiratory physiology, and mechanical ventilation/blood gas management. Consisted of lecture and bedside teaching.

- 1/2007 Course instructor for Nursing 653-002. Presented lecture titled *Pathophysiology of Chronic Lung Disease*.
- 4/2008 Developed and modified the curriculum requirements in the Neonatal Intensive Care Unit for all residents in Pediatrics, Internal medicine/Pediatrics and Triple board programs.
- 4/2008 Course instructor for Physiology 609 (Advanced Respiratory Physiology). Presented lecture on *Respiratory Function in Neonates*.
- 8/2008-8/2012 Co-director of Basic Science Pediatrics Lecture Series: The Basic Science Pediatrics Lecture Series is a required supplement to clinical coursework for all 4<sup>th</sup> year Acting Intern (AI) medical students on rotations including the Pediatric Wards AI (PED 859), Pediatric Intensive Care Unit AI (PED 878), and the Neonatal Intensive Care Unit AI (PED 850). The purpose of this lecture series are to re-introduce 4<sup>th</sup> year medical students, who have chosen pediatrics or medicine/pediatrics as careers, to basic science concepts that will lead them to a deeper understanding of pediatric cases, so that they may become better clinicians, as well as to help them develop as teachers and independent learners.
- 2011-6/2022 ECMO bedside nursing competency: Coordinated and developed bedside nursing competencies for the ECMO program. The lectures included talks regarding an introduction to ECMO, ECMO equipment, ECMO physiology, Coagulation during ECMO, Bedside nursing for the ECMO patient, indications for ECMO and long-term outcomes, complex ECMO cases, cardiac ECMO, and ECMO emergencies. The entire lecture series is available on the KCH ECMO sharepoint site:  
<https://academics.ukhc.uky.edu/medicine/kyecmo/default.aspx>.
- 2011-6/2022 ECMO simulation: The ECMO team has developed case scenarios for the high fidelity ECMO simulation to assist with the ECMO bedside nursing competency and to facilitate/maintain physician competency. Examples of scenarios include arterial air during ECMO, high post-membrane oxygenator pressures during ECMO, and ECMO cannulation.
- 1/2012-11/2014 Course Instructor for Biochemistry 819 (M1). Presented lecture on *January Transition and Pulmonary Complications in Neonates* and presented a lecture on *Neonates and Urea Cycle Disorders*.
- 2/2014-current Course Instructor for Respiratory System MD827 (M2). Presented lectures titled *Neonatal Lung Embryology and Surfactant Function* and *Bronchopulmonary Dysplasia*. This also included exam question preparation. These are presented yearly to the M2 class.
- 6/2021-current Course Instructor for Entrustment in Clinical Medicine MD839 (M3). Teaching clinical skills development, note writing and documentation, physical examination, and grading student assignments and OSCE examinations.
- 10/2021-current College of Medicine simulation for medical students coordinated through the Neonatology Interest Group. Provides medical students the opportunity to learn neonatal intubations through simulations. Focus is the basics of intubating neonates, along with the normal vs. difficult intubations.

- 7/2022-current College of Medicine house advising role for the M1-M4 classes. Act as a mentor and coach for all the medical student classes, assisting with career decision making, and personal and professional development.
- 10/2022-current College of Medicine simulation for medical students coordinated through the Neonatology Interest Group. Provides medical students the opportunity to learn neonatal chest tube placement through simulations utilizing the chicken chest tube model. Focus is on using the Seldinger technique and risks associated with chest tube placement in neonates.
- 1/2023-current Pediatric faculty coach and mentor for the Department of Pediatrics. Includes additional training and education from Brown University in their certified Executive Coaching Program.
- 3/2023 Will be the course instructor for a new Biomedical Engineering Course that will introduce current challenges in clinical medicine that may have engineering solutions to undergraduate biomedical engineering students. A memorandum of understanding for this is currently being reviewed by the Deans of Medicine and Engineering. The faculty in the Department of Biomedical Engineering have voted in favor of a joint appointment in the Department of Biomedical Engineering, the appointment is subject to review and approval from the college of engineering and the provost's office. The syllabus, course number and approval of the course are in various stages of process.

### **Lectures**

- 1/2005-11/2007 Retinopathy of Prematurity. Monthly Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students). Presented this lecture on 5 occasions during this time period.
- 1/2005-6/2008 Mechanical Ventilation and Blood Gases in the Neonate. Monthly Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students). Presented this lecture on 6 occasions during this time period.
- 1/2005-2/2006 Pulmonary Embryology and the progression to Bronchopulmonary Dysplasia. Neonatal Intensive Care Unit Resident lecture. Monthly Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students). Presented this lecture on 2 occasions during this period.
- 1/2005-2/2006 Pulmonary Physiology. Monthly Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students). Presented this lecture on 2 occasions during this period.

- 1/2005-9/2007 Bronchopulmonary Dysplasia. Monthly Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, and Nurse Practitioner students). Presented this lecture on 5 occasions during this period.
- 1/2005-11/2007 Jaundice of the Newborn. Monthly Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, and Nurse Practitioner students). Presented this lecture on 4 occasions during this period.
- 1/2005 Respiratory Distress Syndrome. Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, and Nurse Practitioner students).
- 1/2005 Osteopenia of Prematurity. Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, and Nurse Practitioner students).
- 1/2005-4/2007 Necrotizing Enterocolitis. Monthly Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students). Presented this lecture on 4 occasions during this period.
- 1/2005-4/2010 Intraventricular Hemorrhage. Monthly Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students). Presented this lecture on 6 occasions during this period.
- 1/2005-6/2008 Primary Care for the Ex-Premie. Monthly Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students). Presented this lecture on 4 occasions during this period.
- 1/2005-6/2008 Anemia of Prematurity. Monthly Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students). Presented this lecture on 3 occasions during this period.
- 1/2005 Pulmonary Hypertension. Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students).
- 1/2005-11/2007 Apnea and Periodic Breathing. Monthly Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students). Presented this lecture on 4 occasions during this period.

- 2/2006 NICU Nursing Orientation: Discussing lung development, respiratory physiology, and mechanical ventilation/blood gases. Presented 3 lectures to 15 NICU nurses.
- 2/2006 Radiology Basics for the Neonate. Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students).
- 1/2007 Pathophysiology of Chronic Lung Disease. University of Kentucky: Lecture in Nursing 653-002 with 24 nursing students present.
- 2/2007 University of Kentucky NICU Mortality and Pulmonary Morbidities. Monthly Morbidity and Mortality educational conference.
- 3/2007-7/2007 Discussions on lung development, respiratory physiology, and mechanical ventilation/blood gases. NICU Nursing Orientation: Presented 3 lectures to 15 NICU nurses.
- 4/2007-11-2007 Respiratory Distress Syndrome. Monthly Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students). Presented this lecture on 2 occasions during this period.
- 4/2007-10-2007 Cardiopulmonary Transition to the Extrauterine Environment. Monthly Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students). Presented this lecture on 2 occasions during this period.
- 4/2007 Pulmonary Hypertension. Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students).
- 6/2007-7/2007 Neurodevelopment Outcome of Preterm Infants. Monthly Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students). Presented this lecture on 2 occasions during this period.
- 6/2007 NICU Complications: Morbidity and Mortality. Monthly Morbidity and Mortality educational conference.
- 7/2007-12/2007 Orientation: Admit Orders, Admit Notes, Daily Notes, Discharge Notes. Neonatal Intensive Care Unit monthly pediatric and combined programs orientation was present on 5 occasions during this time period.
- 11/2007 What do you need to know in the middle of the night? Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students).
- 11/2007 Primary Care Follow Up of the Extremely Low Birth Weight Infant. Neonatal Intensive Care Unit Resident lecture which included 6-10

- learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students).
- 4/2008 Respiratory Function in Neonates. Presented lecture to 8 Department of Physiology graduate students.
- 7/2008 Mechanical ventilation and blood gases in the neonate, surfactant deficiency and therapy in the neonate, newborn screening for endocrine and metabolic diseases, and care of the late preterm infant. Presented 4 lectures to 15 NICU nurses.
- 10/2008 Overview of Neonatal Resuscitation Program. Presented lecture to the UK Emergency Department Interns. 6 learners were present.
- 7/2009 Meconium Aspiration Syndrome. University of Kentucky, Department of Pediatrics, Division of Neonatology Noon Conference for Neonatology fellows, Nurse practitioner students, Physician Assistant residents, and Neonatology faculty. 15 learners were present.
- 2/2010 Mechanisms of Acute Lung Injury. Presented to the Neonatology fellows, Nurse practitioner students, Physician Assistant residents, and Neonatology faculty at noon conference. 10 learners were present.
- 12/2008-1/2010 Evaluation of Neonatal Inborn Errors of Metabolism. Presented lecture at the Pediatric residents noon conference on 2 occasions. 40 total learners were present.
- 3/2009 Respiratory Distress Syndrome. Presented to the Obstetrics and Gynecology resident conference to 12 learners.
- 10/2009 X-ray Interpretation Skill Station. Presented at the Advanced Pediatric Life Support course to 20 learners.
- 11/2009 Neurodevelopmental Outcome of Preterm Infants. Presented at the Department of Obstetrics and Gynecology residents conference to 15 learners.
- 3/2010 Bronchopulmonary Dysplasia. Presented lecture at the Pediatric residents noon conference to 25 learners.
- 9/2010 Neonatal Indications for Extracorporeal Membrane Oxygenation. Presented to the NICU/PICU nursing staff to 50 learners.
- 9/2010 Neonatal Resuscitation. Presented lecture at the Anesthesiology residency lecture series to 20 learners.
- 3/2011 Newborn Screening in Kentucky. Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students).
- 5/2011 Care of the Late Preterm Infant. Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students).
- 7/2011 X-ray interpretation. Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students).



- 7/2011 Jaundice of the Newborn. Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students).
- 10/2011 Bronchopulmonary Dysplasia. Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students).
- 11/2011 Retinopathy of Prematurity. Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students).
- 11/2011 Intraventricular Hemorrhage. Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students).
- 1/2012 Transition and Pulmonary Complications in Neonates. Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students).
- 3/2012 Neonatal Grand Rounds: Streptococcus bovis infections. Presented to the Neonatology Division which included Neonatology fellows, Nurse practitioner students, Physician Assistant residents, and Neonatology faculty. 12 learners were present.
- 7/2012 Kentucky Children's Hospital Neonatal/Pediatric ECMO Program. Presented to the University of Kentucky Mechanical Circulatory Support group.
- 4/2012-8/2012 Neonatal and Pediatric Indications for ECMO and Long-term Outcomes. Presented lecture to Neonatology fellows and NICU nurses. 40 total learners were present.
- 8/2012 Physiology of Diseases Treated with ECMO. Presented lecture to Neonatology fellows and NICU nurses. 20 learners were present.
- 10/2012 Pulmonary Basics and Respiratory Distress Syndrome. Presented lecture to PA residents with 4 total learners.
- 11/2012 Neonatal Grand Rounds: The Respiratory Work Group. Presented to the Neonatology Division which included Neonatology fellows, Nurse practitioner students, Physician Assistant residents, and Neonatology faculty. 12 learners were present.
- 1/2013 Mechanical Ventilation and Blood Gas Interpretation. Presented lecture to PA residents with 4 total learners.
- 1/2013 The Preterm Infant. Presented at the Department of Obstetrics and Gynecology residents conference to 10 learners.
- 1/2013 Respiratory Distress Syndrome. Presented to the Pediatric residents noon conference with 25 learners.
- 2/2013 Intern Orientation to Mechanical Ventilation and ABG's. Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4

- medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students).
- 2/2013 Discharge and Follow-up of the ELBW infant. Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students).
- 2/2013-10/2013 Necrotizing Enterocolitis. Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students). Presented on 2 occasions.
- 11/2013 Bronchopulmonary Dysplasia. Presented to the Pediatric residents noon conference with 22 learners.
- 11/2013-11/2015 Neonates and Urea Cycle Disorders. Presented to lecture to M1 medical students on 3 occasions.
- 1/2014 Basics of ECMO. Presented lecture to PA residents with 4 total learners.
- 3/2014 Oxygenation and Physiology of ECMO. Presented to the Neonatology Fellows teaching conference which included Neonatology fellows, Nurse practitioners students, Physician Assistant residents, and Neonatology faculty. 12 learners were present.
- 8/2014 Meconium Aspiration Syndrome. Presented lecture to Pediatric residents noon conference with 25 learners.
- 11/2014 Introduction and Physiology of ECMO. Presented to neonatology fellows, NICU/PICU nurses, and PA residents. 20 learners were present.
- 11/2014 Pathophysiology of Diseases Treated with ECMO. Presented to neonatology fellows, NICU/PICU nurses, and PA residents. 20 learners were present.
- 11/2014 Neonatal ECMO: Basics, Indications, and Long-term Outcomes. Presented to the PA residents. 20 learners were present.
- 2/2014-current Neonatal Lung Embryology and Surfactant Function. Presented lecture to M2 class.
- 2/2014-current Bronchopulmonary Dysplasia. Presented lecture to M2 class.
- 6/2015 Neonatal ECMO: Basics, Indications, and Long-term Outcomes. Presented lecture to Maternal-Fetal Medicine fellows. 5 learners were present.
- 2/2016 Neonatal ECMO: Basics, Indications, and Long-term Outcomes. Presented lecture to Advanced Practice Providers. 12 learners were present.
- 3/2016 Pathophysiology of the Diseases Treated with ECMO. Presented lecture to the KCH ECMO team which included NICU/PICU nursing and Neonatology fellows. 20 learners were present.
- 3/2016 KCH ECMO Outcomes. Presented lecture to the KCH ECMO team which included NICU/PICU nursing and Neonatology fellows. 20 learners were present.
- 5/2016 Neonatal Shock. Presented to the Pediatric residents noon conference with 25 learners present.

- 9/2016 Oxygenation and Physiology of ECMO. Presented lecture to the KCH ECMO team which included NICU/PICU nursing and Neonatology fellows. 20 learners were present.
- 9/2016 Bronchopulmonary Dysplasia. Presented lecture to the Pediatric residents noon conference with 20 learners present.
- 12/2016 Oxygenation, ECMO Physiology, and KCH ECMO Outcomes. Presented to the Neonatology Fellows teaching conference which included Neonatology fellows, Nurse practitioner students, Physician Assistant residents, and Neonatology faculty. 12 learners were present.
- 3/2017 X-ray Interpretation. Presented to the KCH Transport Team with 10 learners present.
- 4/2017 KCH ECMO Team Update for 2017. Presented to UK Healthcare Leadership.
- 5/2017 Neonatal Shock. Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students).
- 5/2017 Jaundice. Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students).
- 5/2017 Transition to Extrauterine Life. Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students).
- 2/2018 Congenital Lung Anomalies. Presented to the Neonatology Fellows teaching conference which included Neonatology fellows, Nurse practitioner students, Physician Assistant residents, and Neonatology faculty. 12 learners were present.
- 3/2018 KCH ECMO Team Update for 2017. Presented to the Neonatology Fellows teaching conference which included Neonatology fellows, Nurse practitioner students, Physician Assistant residents, and Neonatology faculty. 12 learners were present.
- 3/2018 Mechanical Ventilation and Blood Gas Management. Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students).
- 5/2018 Neonatal Jaundice. Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students).
- 7/2018 ECMO Orientation and Physiology. Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students).

- 7/2018 Neonatal Shock. Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students).
- 7/2018 Newborn Screening. Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students).
- 10/2018 ECMO Orientation: Basics of ECMO. Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students).
- 10/2018 X-ray Review. Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students).
- 10/2018 Necrotizing Enterocolitis. Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students).
- 11/2018 Neonatal Oxygenation and Delivery. Presented to the neonatal fellows with 6 learners present.
- 11/2018 Basics of ECMO. Presented to the PICU and NICU nursing staff and the neonatology fellows with 20 learners present.
- 11/2018-1/2019 Weaning from ECMO. Presented lecture to the KCH ECMO team which included NICU/PICU nursing and Neonatology fellows. 40 total learners were present. Presented on 2 occasions.
- 1/2019 Neonatal Respiratory Failure. Presented to the Pediatric residents noon conference with 20 learners.
- 1/2019 Physiology of ECMO. Presented to the neonatology fellows with 6 total learners.
- 1/2019 Biochemistry and Metabolism of Bilirubin. Presented to the neonatology fellows with 8 learners.
- 2/2019 Neonatal Shock. Presented to the Neonatology Fellows teaching conference which included Neonatology fellows, Nurse practitioner students, Physician Assistant residents, and Neonatology faculty. 12 learners were present.
- 4/2019 Neonatal Shock. Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students).
- 2/2019 Anticoagulation on ECMO. Presented to the neonatology fellows with 6 learners.
- 2/2019 Meconium Aspiration Syndrome. Presented to the neonatology fellows with 7 learners.
- 2/2019 Mechanical Ventilation and Blood Gas Management. Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical

- students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students).
- 3/2019 Neonatal Oxygenation and Delivery. Presented to the Neonatology Fellows teaching conference which included Neonatology fellows, Nurse practitioner students, Physician Assistant residents, and Neonatology faculty. 20 learners were present.
- 4/2019 Neonatal Shock. Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students).
- 4/2019 A Review of Anticoagulation on ECMO. Presented lecture to the KCH ECMO team which included NICU/PICU nursing and Neonatology fellows. 15 total learners were present.
- 4/2019 KCH ECMO Outcomes and Common Neonatal Diseases Treated with ECMO. Presented lecture to the KCH ECMO team which included NICU/PICU nursing and Neonatology fellows. 15 total learners were present.
- 5/2019 Mechanical Ventilation and Blood Gas Management. Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students).
- 7/2019-10-2019 Newborn Screening. Neonatal Intensive Care Unit Resident lecture which included 15 total learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students). Presented on 2 occasions.
- 10/2019 Necrotizing Enterocolitis. Neonatal Intensive Care Unit Resident lecture which included 6-10 learners (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students).
- 10/2019-11/2019 Basics of ECMO. Neonatal Intensive Care Unit Resident lecture which included 15 learners total (M4 medical students, Pediatric residents, Internal medicine/Pediatric residents, Triple board residents, Physician Assistant residents, and Nurse Practitioner students). Presented on 2 occasions.
- 11/2019 Pediatric vs. Neonatal ECMO. Presented lecture to the KCH ECMO team which included NICU/PICU nursing and Neonatology fellows. 15 total learners were present.
- 11/2019 KCH ECMO Team Introduction. Presented lecture to the KCH ECMO team which included NICU/PICU nursing and Neonatology fellows. 15 total learners were present.
- 1/2020 Neonatal Chest Tube Placement and Simulation. Presented and simulated at the Pediatric residents noon conference with 20 learners were present.
- 1/2020 Pulmonary Vascular Resistance, Nitric Oxide and other Pharmacologic Therapies. Presented to the Neonatology Fellows teaching conference

- which included Neonatology fellows, Nurse practitioner students, Physician Assistant residents, and Neonatology faculty. 25 learners were present.
- 1/2020 Newborn Screening: Neonatology Perspective. Presented at the Pediatric residents noon conference with 20 learners present.
- 5/2020 Bronchopulmonary Dysplasia. Presented at the Neonatology Fellowship physiology teaching conference with 9 learners present.
- 6/2020 Current Challenges in Neonatal ECMO. Presented to the KCH ECMO Team quarterly meeting with 18 learners present.
- 8/2020 ROP Basics. Presented to the NICU residents, PA residents, M4 and M3 students in the NICU. 10 learners present.
- 9/2020 Neonates and Urea Cycle Disorders. Presented to the NICU residents, PA residents, M4 and M3 students in the NICU. 10 learners present.
- 10/2020 Community Grand Rounds: Neonatal Pulmonary Hypertension. Neonatology fellows and referring pediatricians in Kentucky. 15 learners present.
- 11/2020 Meconium Aspiration Syndrome. Presented at the Neonatology Grand Rounds to the Neonatology Fellows, PA residents, Advanced Practice Providers, and Neonatology Faculty. There were 31 participants and 10 learners.
- 2/2021 Bronchopulmonary Dysplasia. Presented to the Neonatology Fellows, M3 and M4 students, and PA residents in the NICU. 12 learners present.
- 5/2021 Congenital Diaphragmatic Hernia Management. Presented to the Neonatology Fellows, M3 and M4 students, and PA residents in the NICU. 15 learners present.
- 5/2021 Congenital Lung Anomalies. Presented to the Neonatology Fellows. 9 learners present.
- 8/2021 Neonatal Oxygenation and Delivery. Presented to the Neonatology Fellows teaching conference. 9 learners were present.
- 10/2021 Simulation for neonatal intubations. 45 medical students attended the simulation of neonatal intubations. Focus was the basics of intubating neonates, along with the normal vs. difficult intubations.
- 11/2021 Neonatal ECMO: Indications, Techniques, Risks and Outcomes. Presented to the Neonatology Fellows teaching conference. 9 learners were present.
- 12/2021 Basics of Neonatal ECMO. Presented to the PA Residents. 2 learners were present.
- 1/2022 Meconium Aspiration Syndrome. Presented to the PA Residents. 2 learners were present.
- 1/2022 Simulation Organizer and Instructor for teaching medical students (M1-M4) Neonatal and Pediatric intubation skills. 46 learners present.
- 2/2022 The Neonatology Perspective on Newborn Screening. Presented to the Pediatrics Noon Conference. 25 learners were present.

- 3/2022 Meconium Aspiration Syndrome. Presented at the Neonatology Grand Rounds to the Neonatology Fellows, PA residents, Advanced Practice Providers, and Neonatology Faculty. There were 20 participants and 10 learners.
- 8/2022 Neonatal ECMO: Indications, Techniques, Risks and Outcomes. Presented to the Neonatology Fellows teaching conference. 9 learners were present.
- 8/2022 Neonatal Shock. Presented to the Pediatrics Noon Conference. 28 learners were present.
- 10/2022 Basics of ECMO. Presented to the Murray State Premedical Society. 45 learners were present.
- 10/2022 Necrotizing Enterocolitis. Presented to the Pediatrics Noon Conference. 30 learners were present.
- 10/2022 Meconium Aspiration Syndrome. Presented to the PA Resident. 1 learner was present.
- 10/2022 Simulation for chest tube placement utilizing the chicken chest tube model. 45 medical students attended and participated. Focus was on using the Seldinger technique and risks associated with chest tube placement in neonates.
- 11/2022 Basics of Neonatal ECMO. Presented to the PA Resident. 1 learner was present.
- 1/2023 Simulation for neonatal intubations. 15 medical students attended the simulation of neonatal intubations. Focus was the basics of intubating neonates, along with the normal vs. difficult intubations.
- 8/2023 Neonatology Interest Group. Invited speaker for the Neonatology Interest Group student organization. Presented to 30 medical students.
- 10/2023 Neonatal ECMO: Indications, Techniques, Effects, and Risks. Presented to the PA residents for the NICU. 3 PA residents were present.
- 10/2023 ECMO: Basics, Indications, and Outcomes. Invited speaker to Murray State University pre-medical organization. 40 undergraduate students were present.
- 10/2023 Coaching & Mentoring for Medical School. Invited speaker for the Medicats pre-med student organization. 40 undergraduate students were present.
- 11/2023 Engineering & Medicine: Coaching & Mentoring for Medical School. Invited speaker for the Engineers in Medicine student organization. 15 undergraduate students were present.
- 11/2023 Mentoring & Coaching. 12 faculty from the College of Medicine attended the presentation.
- 12/2023 Neonatal Chest Tube Simulation. Performed neonatal chest tube simulation using the chicken chest tube model at the UK CATS simulation center. 35 medical students participated.

12/2023

Meconium Aspiration Syndrome. Presented to the PA Residents. 3 learners were present.



## VIII. ADVISING ACTIVITIES

### Undergraduate Student Advising

#### **University of Kentucky Medical Center**

Lexington, Kentucky

- 7/2017 Summer Medical Observership Program: Erin Wolf, a UK student who completed 20 hours of shadowing in the NICU.
- 7/2017 Advisor, and mentor for Tyler Mattingly, Western Kentucky University student who was interested in becoming a physician. Tyler participated in shadowing and attending NICU rounds. Graduated University of Louisville Medical School, class of 2022. Currently in anesthesia residency with the University of Louisville.
- 2/2019-10/2019 Ayah Shakir, who is a Midway College student who participated in shadowing and attending NICU rounds.
- 3/2019-current Advisor, mentor and coach for Kate Whitman, St. Louis University student who is interested in becoming a physician. Kate participated in shadowing and attending NICU rounds. Accepted to the UK COM, class of 2027.
- 10/2019 Advisor and mentor for Mitchell Greer, a UK student who is interested in becoming a physician. He participated in shadowing and attending NICU rounds. Currently applying to dental school.
- 10/2020-4/2022 Advisor, mentor for Grace Ison, a UK student interested in becoming a physician. She participated in shadowing and attending NICU rounds.
- 10-2020-current Advisor, mentor and coach for Lily Giles, a Centre College student who is interested in becoming a physician. Lily participated in shadowing and attending NICU rounds.
- 12/2020-current Advisor, mentor and coach for Thomas Gerhardstein, an Auburn University student who is interested in becoming a physician. Thomas participated in shadowing and attending NICU rounds. Accepted to the Kentucky College of Osteopathic Medicine, class of 2027.
- 6/2021-current Advisor, mentor and coach for Cameron Coulter, a Centre College student who is interested in becoming a physician. Cameron participated in shadowing and attending NICU rounds. Accepted to the UK COM, class of 2027.
- 2/2022-current Advisor, mentor and coach for Jason Picha, a UK student who is interested in becoming a physician. Jason participated in shadowing and attending NICU rounds. I provide on-going mentoring for Jason (1-2 hours/month).
- 5/2022-7/2023 Advisor, mentor and coach for Lauren Adams, a University of Kentucky student who is interested in becoming a physician. Lauren participated in shadowing and attending NICU rounds. Currently University of Louisville College of Medicine, class of 2027.
- 7/2022 Summer Medical Observership Program: Katie Lamb, a UK student who completed 20 hours of shadowing in the NICU.
- 8/2023-current Faculty sponsor and advisor for Kentucky's Loya Foundation (SSO-sponsored student organization). Founding student members include Jason Picha and Clayton Genty. Advised and mentored with initiating a

- new SSO. Approximately 20 members total. Mission is fund raising for other organizations that serve individuals in need.
- 9/2023-current Mentor and coach for Hunter Colson, a University of Kentucky College of Engineering student who will matriculate at the UK COM. Has been accepted into medical school. I provide on-going mentoring and coaching 1-2 hours/month.
- 11/2023-current Mentor and coach for Jake Miller, a University of Kentucky College of Engineering student who is interested in applying to medical school. I provide on-going mentoring and coaching 1-2 hours/month.

### **Medical Student Advising**

#### **University of Kentucky Medical Center**

Lexington, Kentucky

- 2012-2016 Advisor, mentor and coach/Hannah Baker/UK COM Class of 2016
- 7/2019-5/2020 Advisor, mentor and coach/Charles Grigsby III//average 1-2 hours/week including clinical coaching and career choice decision making. Graduated UK COM, class of 2020, and matched in internal medicine/pediatrics residency at the UK COM.
- 7/2019-5/2020 Advisor, mentor and coach/Jacob Meece/M4/average 1 hour/week including clinical coaching and career choice decision making. Graduated UK COM, class of 2020, and matched in internal medicine/pediatrics residency at the UK COM.
- 10/2019-5/2021 Advisor, mentor and coach/George Chalhoub, UK COM class of 2021. I have assisted George with clinical coaching, career choice decisions, IRB submission, along with manuscript preparation and submission. Mentored in the Self-Directed Learning Activity for Elective: Research in Medicine (MD-851). On-going IRB#58141 titled Comparison of double-lumen catheter products utilized during neonatal ECMO: Avalon® vs. Origen®. Manuscript is currently being reviewed by the journal *Perfusion*. Manuscript# PRF-23-0066. Review in progress. Dr. Chalhoub is the first author on the submission. Currently in completing his Internal Medicine residency training at Montefiore Medical Center/Albert Einstein College of Medicine from 2021-2024.
- 10/2019-5/2023 Advisor, mentor and coach/Hallie Walther/UK COM class of 2023. I have assisted Hallie with clinical coaching and career choice decision making. I was her Professional Student Mentored Research Fellowship (PSMRF) program mentor that helped her with IRB submission, data collection, analysis, manuscript preparation and publication. The on-going IRB#52145 titled “Evaluation of neonates placed on ECMO who have Neonatal Abstinence Syndrome.” The manuscript is titled “Impact of *in utero* Drug Exposure on Neonates Requiring ECMO: A Retrospective Cohort Study.” It has been accepted for publication in *Frontiers in Pediatrics-Neonatology* section. Hallie is the first author on the manuscript.

3/2020-5/2023	Advisor, mentor and coach/Tyler Shimfessel/Class of 2023/average 1 hour/month including clinical coaching and career choice decision making.
1/2021-5/2024	Advisor, mentor and coach/Alex Johnston/Class of 2024/average 2 hours/month including clinical coaching and career choice decision making.
1/2021-5/2024	Advisor, mentor and coach/Emily Ranseen/Class of 2024/average 1 hour/month including clinical coaching and career choice decision making.
2/2021-5/2022	Advisor, mentor and coach/Blaine Patty/Class of 2022/average 1 hour/month including clinical coaching and career choice decision making.
12/2021-current	Faculty sponsor and advisor for the Neonatology Interest Group (SSO-sponsored student organization) which includes M1-M4. Founding student members include Madison Reed, Madilyn Limeberry, and Skylar Hargrove. Advised and mentored with initiating a new SSO. Approximately 50 members total. Meets monthly with presentations on various Neonatology topics, and provides career counseling.
1/2022-current	Faculty sponsor and advisor for the Medical Student Survival Group (SSO-sponsored student organization) with a goal to create and develop a medical student led resource intended to provide advice and guidance for medical school. Founding student members include Max Rakutt, Colby Canter and Mohammed Hindi. Advised and mentored regarding initiating a new SSO. Currently enrolling members from M1-M4. Meets monthly regarding resource development and content.
11/2022-current	Faculty sponsor and advisor for the Caduceus Committee (SSO-sponsored student organization) with goal to assist the medical students with fund raising and planning for the annual Caduceus celebration. Founding students included Allison Wright and Jazz McKinney.
12/2021-current	Advisor, mentor and coach/Michael Vieth/UK COM class of 2025. I have assisted Michael with clinical coaching and career choice decision making. I am his research mentor, and am assisting with IRB submission, data collection, analysis, manuscript preparation and submission. The ongoing IRB#53397 titled "Congenital Diaphragmatic Hernia (CDH) in Low Volume Centers." Michael had a first author poster presentation at the 39th Annual Children's National Symposium: ECMO and the Advanced Therapies for Respiratory Failure in Keystone, CO. ECMO and Advance Therapies for Respiratory Failure Meeting Proceedings.
11/2022-current	Advisor, mentor and coach/Parisa A. Shamaei Zadeh/UK COM class of 2026. I have assisted Parisa with doing clinical research. I am her research mentor, and am assisting with IRB submission, data collection, analysis, manuscript preparation and submission. The IRB#59194 is titled "NICU outcomes of patent ductus arteriosus: device vs. surgical closure." This research project has been submitted as a Professional Student Mentored Research Fellowship (PSMRF) application (pending review).
8/2022-current	Advisor, mentor and coach/John Slaughter/UK COM class of 2026. I have assisted John with career decision making and planning. I have also

	assisted John with doing clinical research, and am his research mentor, assisting with IRB submission, data collection, analysis, manuscript preparation and submission. The IRB#86276 is titled “Clinical Parameters for Neonatal ECMO: Invasive vs. Non-invasive Indicators.” This research project has been submitted as a Professional Student Mentored Research Fellowship (PSMRF) application (pending review).
7/2023-current	Faculty sponsor and advisor for the COM Casino Night (SSO- sponsored student organization) with the primary goal of fund raising for the Salvation Army Clinic. Founding students included Skylar King and Jazz McKinney.
3/2023-current	Faculty sponsor and advisor for ChefMed (SSO-sponsored student organization) which includes M1-M4. Advised and mentored Aleksandr Lukyanchuk and Sasha V. Sairajeev with re-initiating a SSO (student sponsored organization). The purpose of ChefMed is using food and nutrition to help other students and those in need. Approximately 20 members total.
10/2023-current	Faculty sponsor and advisor for the Middle Eastern Medical Student Organization (SSO- sponsored student organization) with the goal to increase awareness of the challenges and hardships encountered by the Middle Eastern community in Kentucky. Founding students included Mary R. Wasef, Patrick C. Bidros, and Matthew C. Fahmy.

### **Resident Advising**

#### **University of Kentucky Medical Center**

Lexington, Kentucky

7/2004-5/2009	Advisor and mentor/Greg Reynolds/ Internal Medicine and Pediatrics Intern and Resident /average 1 hour/week including advising and mentoring
7/2009-5/2012	Advisor and mentor/Matt Bacon/Internal Medicine and Pediatrics Intern and Resident/average 1 hour/week including advising and mentoring. Matt completed his internal medicine/pediatrics residency at the UK COM, Pediatric ICU fellowship at Vanderbilt University, and Cardiac ICU fellowship at the University of Cincinnati. He is currently an Associate Professor of Pediatrics at the UK COM, and interim Division Chief for the Pediatric ICU.
7/2011-6/2014	Advisor and mentor/Steven Ford/Pediatric Intern and Resident/average 1 hour/week including advising and mentoring, along with data analysis, abstract submission, poster preparation and presentation at the annual Pediatric Academic Society meeting. Steven completed pediatric residency at the UK COM, and neonatology fellowship at the Baylor College of Medicine. He is currently an Assistant Professor of Pediatrics/Division of Neonatology at University of South Florida Morsani College of Medicine.
7/2019-6/2022	Advisor, mentor and coach/Courtney Kantzler/Pediatric Intern and Resident/average <1 hour/week including advising, mentoring and

	coaching. Courtney was accepted into the Neonatology Fellowship at the UK COM.
10/2019-6/2022	Advisor, mentor and coach/Rahul Joseph/Pediatric Resident and Chief Resident/average 1 hour/week including advising, mentoring and coaching. Rahul was accepted into the Neonatology Fellowship at the UK COM.
5/2020-6/2021	Advisor, mentor and coach/Audra Stacy/Pediatric Intern and Resident/average <1 hour/week including advising, mentoring and coaching. Audra was accepted into the Neonatology Fellowship at the UK COM.
5/2020-2022	Advisor, mentor and coach/Hope VanCleve/Pediatric Resident/average 1 hour/week including advising, mentoring and coaching. Currently working on a research project evaluating the use of high frequency jet ventilation in the ELBW (< 1,000 grams) infants in the NICU.
7/2020-current	Advisor, mentor and coach/Charles Grigsby III//average 1-2 hours/month including clinical coaching and career choice decision making. Currently completing internal medicine/pediatrics residency at the UK COM. Applying to cardiology fellowship, and working on a research project IRB# 85740 (approval is pending) titled "Evaluation of sedation scoring for neonates placed on ECMO: RASS vs. N-PASS."
7/2020-current	Advisor, mentor and coach/Jacob Meece/M4/average 1 hour/month including clinical coaching and career choice decision making. Currently completing internal medicine/pediatrics residency at the UK COM.
8/2021-6/2023	Advisor, mentor and coach/Samarchitha Magal/Pediatric Resident/average 1 hour/week advising and mentoring regarding career selection and neonatology. Samarchitha was accepted into Neonatology Fellowship at Baylor School of Medicine starting July 1, 2023.
3/2023-current	Advisor, mentor and coach/Vince Gouge/Pediatric Resident/average 1 hour/week advising and mentoring regarding career selection and neonatology.
3/2023-current	Advisor, mentor and coach/Sarah Bibby/Pediatric Resident/average 1 hour/month advising and mentoring regarding career selection and neonatology.
4/2023-current	Advisor, mentor and coach/Blaine Patty/Internal Medicine and Pediatric Resident/average 1 hour/month advising and mentoring regarding career selection and neonatology.
8/2023-current	Advisor, mentor and coach/Mickey Winkle/Pediatric Resident/average 1 hour/month advising and mentoring regarding career selection and neonatology.

## **Fellow Advising**

### **University of Kentucky Medical Center**

Lexington, Kentucky

- 7/2006-6/2011 Advisor, mentor and coach/J. Thomas Meadows/Pediatric Intern and Resident, Neonatology Fellow/average 2-4 hours/week. This included advising, mentoring and coaching, along with fellowship research project development. Research project development included research design, data collection and analysis, abstract submission, and poster preparation at the annual Pediatric Academic Society meeting. We also did manuscript preparation, and publication. Currently an Associate Professor in the Department of Pediatrics/Division of Neonatology at the University of Tennessee Graduate School of Medicine.
- 7/2011-6/2014 Advisor, mentor and coach/Sumit Dang/Neonatology Fellow/average 2-4 hours/week. This included advising, mentoring and coaching, along with fellowship research project design and development. Sumit accepted a position as an Assistant Professor of Pediatrics/Division of Neonatology at the UK COM.
- 7/2014-6/2017 Advisor, mentor and coach/John Daniel/Neonatology Fellow/average 2-4 hours/week. This included advising, mentoring and coaching, along with fellowship research project development. Research project development included research design, data collection and analysis, abstract submission, poster preparation and presentation at the annual Pediatric Academic Society and the annual Extracorporeal Life Support Organization meetings. We also completed manuscript preparation, and publication. John accepted a position as an Assistant Professor of Pediatrics/Division of Neonatology at Children's Mercy, Kansas City and University of Missouri – Kansas City, School of Medicine.
- 7/2016-6/2018 Advisor, mentor and coach/Lesley N. Davidson/Neonatology Fellow/average 1-2 hours/week including advising, mentoring and coaching, along with fellowship research project design and development. Nikki accepted a position as a staff neonatologist at Pediatrix Medical Group at Central Baptist Hospital in Lexington, KY.
- 7/2016-6/2019 Advisor, mentor and coach/Alison Slone/Neonatology Fellow/average 2-4 hours/week. This included advising, mentoring and coaching, along with fellowship research project design and development, along with quality improvement/quality assurance project design and development. Research project development included patient enrollment, data collection and analysis, abstract submission, poster preparation and presentation at the annual Pediatric Academic Society and the annual Extracorporeal Life Support Organization meetings. Ali accepted a position as an Assistant Professor of Pediatrics/Division of Neonatology at the UK COM.
- 7/2017-6/2020 Advisor, mentor and coach/Brian Moore/Neonatology Fellow/average 1-2 hours/week. This included advising, mentoring and coaching, along with fellowship research project design and development. Also included data collection, data analysis, abstract submission, and poster presentation at the annual Vermont Oxford Network Quality Improvement meeting.

	Brian is a staff neonatologist at Pediatrix Medical Group at Mercy Hospital in St. Louis, MO.
7/2017-6/2020	Advisor, mentor and coach/Mark Stephens/Neonatology Fellow/average 1 hour/week. This included advising, mentoring and coaching. Facilitated additional ECMO teaching, training, and on-going mentoring. Mark accepted a position as a Neonatologist at the Winnie Palmer Hospital for Women and Babies in Orlando, FL.
7/2018-6/2021	Advisor, mentor and coach/Ahsan Akhtar/Neonatology Fellow/average 1 hour/week. This included advising, mentoring and coaching. Ahsan is a Neonatologist in Madisonville, KY.
7/2018-2021	Advisor, mentor and coach/Pratibha Thakkar/Neonatology Fellow/average 2 hours/week. This included advising, mentoring and coaching. Facilitated additional ECMO teaching, training, and on-going mentoring. Pratibha accepted a position as an Assistant Professor of Pediatrics at the University of Oklahoma Health Sciences Center.
7/2019-6/2022	Advisor, mentor and coach/Ashley Olszewski/Neonatology Fellow/average 1-2 hours/week. This included advising, mentoring and coaching. Ashley accepted a faculty position as an Assistant Professor of Pediatrics/Division of Neonatology at the UK COM.
10/2020-current	Advisor, mentor and coach/Maher Ajour/Neonatology Fellow/average 1 hour/week. This included advising, mentoring and coaching. Mentoring on a research project development and implementation. This includes obtaining IRB approval, data collection and analysis, and poster and manuscript preparation. The IRB#73200 that is titled “Retrospective review of <i>Ureaplasma spp.</i> prevalence and outcome in premature infants” remains active and the research is on-going. Maher has presented at the Pediatric Academic Societies 2022 Meeting in Denver, CO. His abstract was published in <i>Ped Res</i> , April 2022. His manuscript has been submitted to <i>Frontiers in Pediatrics</i> and is pending review.
7/2021-current	Advisor, mentor and coach/Audra Joseph/Neonatology Fellow/average 1 hour/week. This included advising, mentoring and coaching.
7/2022-current	Advisor, mentor and coach/Rahul Joseph/Neonatology Fellow/average 1 hour/week. This included advising, mentoring and coaching.
7/2022-current	Advisor, mentor and coach/Courtney Kantzler/Neonatology Fellow/average 1 hour/week. This included advising, mentoring and coaching.

### **Graduate Student Advising**

1/2023-current	Advisor, mentor and coach/Kori S. Williams/Ph. D Candidate in the College of Pharmacy. Serving on Kori’s Ph. D committee along with coaching her regarding career development and decision making. Kori’s Ph. D project is pharmaceutical development in extreme preterm infants with bronchopulmonary dysplasia.
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## **Faculty Advising**

- 7/2014-current Advisor, mentor and coach/Sumit Dang/Neonatology Faculty/average 2 hours/month. This includes mentoring and coaching regarding career development and decision making. Currently an Associate Professor of Pediatrics/Division of Neonatology at the UK COM. Sumit is the KCH Director of Transport, Pediatrics Clerkship Co-Director, and the NICU Acting-Internship Director.
- 7/2017-current Mentor and coach/John Daniel/Neonatology Faculty/average 2 hours/month. This includes mentoring and coaching regarding career decision making and guidance, along with ECMO program management and case discussion. John is currently the Cardiac Neonatology Program Director, ECMO Program Director, and Associate Medical Director for the Division of Neonatology, Children's Mercy, Kansas City, and Associate Professor of Pediatrics, University of Missouri – Kansas City, School of Medicine.
- 7/2019-current Mentor and coach/Alison Slone/Neonatology Faculty/average 2-4 hours/month. This includes mentoring and coaching regarding career decision planning and guidance. Ali is currently faculty at the University of Kentucky College of Medicine, Department of Pediatrics, Division of Neonatology where she is an Associate Program Director for the Pediatrics Residency program and the Outreach Director.
- 7/2020-current Career mentor and coach/Mark Stephens/Neonatology Faculty/average 1 hour/month. This includes mentoring and coaching regarding career decision making and ECMO program management and case discussion. Mark is currently the Assistant Director for the Neonatal ECMO Program, along with being the Assistant Director for the Neonatal Surgical Services at the Winnie Palmer Hospital for Women and Babies in Orlando, FL.
- 7/2022-current Mentor and coach/Pratibha Thakkar/Neonatology Faculty/average 2 hours/month. This includes mentoring and coaching regarding career decision planning and development, along with ECMO program management and case discussion. Pratibha is an Assistant Professor of Pediatrics at the University of Oklahoma Health Sciences Center. She will be the neonatal ECMO program director starting July 1, 2023. Continued mentoring on a research project that is evaluating our outcomes of neonates born with congenital diaphragmatic hernia for the last 10 years in our NICU. This included obtaining IRB approval, data collection and analysis, and poster and manuscript preparation. Pratibha was the last author on a poster presentation at the 39th Annual Children's National Symposium: ECMO and the Advanced Therapies for Respiratory Failure in Keystone, CO. ECMO and Advance Therapies for Respiratory Failure Meeting Proceedings. (February 27, 2023).
- 7/2022-current Mentor and coach/Nick Severyn/Neonatology Faculty/average 1 hour/week. This includes mentoring and coaching, along with ECMO program management and case discussion. We are currently working on 2 QA/QI projects for the KCH ECMO team, which will include IRB submission, data collection, national presentation, and manuscript



preparation. Nick will become the Neonatal ECMO Director starting July, 2023.

7/2022-current

Mentor and coach/Jeremy Sites/Pediatric Intensive Faculty/average 1 hour/week. This includes mentoring and coaching regarding career decision making and guidance. We are currently working on 2 QA/QI projects for the KCH ECMO team, which will include IRB submission, data collection, national presentation, and manuscript preparation. Jeremy will become the PICU ECMO Director in July, 2023.

## **IX. ADMINISTRATIVE ACTIVITIES & UNIVERSITY SERVICE**

### **University**

8/2011-8/2014      **University of Kentucky**  
Lexington, Kentucky  
Member, University Senate

### **College of Medicine**

8/2005-2008      **University of Kentucky Medical Center**  
Lexington, Kentucky  
Member, Financial Aid/Scholarship Committee  
7/2008-8/2011      Member, Faculty Council  
1/2010-2015      Internal Medicine/Pediatrics Residency Program Resident Competency  
Committee  
10/2019-9/2020      Chair-elect, Faculty Council  
10/2020-10/2021      Chair, Faculty Council  
1/2021-2/2021      Member, COM Deans Summative Review Committee  
6/2021      Member, Advisory Committee-Acting Dean for the COM  
10-2021-10/2022      Member, Faculty Council  
7/2021-current      Member, College of Medicine Admissions Committee  
1/2023-6/2023      Member, College of Medicine Deans Search Committee

### **Medical Center**

2/2005-2006      Pediatrics Capital Review Team  
2/2007-10/2008      Revenue Chair, March of Dimes  
8/2008-2010      Neonatal Intensive Care Unit Respiratory Task Force  
8/2009-2015      Member, Pediatric Radiology Quality, Safety, and Compliance Committee  
5/2010-2015      Member, Hospital Intensive Care Unit Committee  
5/2011-2015      Member, Hospital ICU Executive Committee  
5/2011-8/2014      Member, Kentucky Children's Hospital Capital Request Committee  
8/2011-8/2014      Chair, NICU Electronic Medical Record Documentation Committee  
8/2011-8/2018      Chair, NICU Respiratory Work Group  
8/2013-2015      Member, NICU Operations Council  
6/2018-2022      Director, Kentucky Children's Hospital ECMO Team  
1/2023-current      Member, Pediatrics Career Development Committee

### **National**

2011 Thrasher Foundation Grant Reviewer

## **X. SPECIAL ASSIGNMENTS**

## **XI. HONORS & AWARDS**

5/2003	Awarded the Len and Arlean Fries International Travel Grant, Irish and American Pediatric Society to attend conference in Ottawa, Canada
5/2004	Awarded Travel Grant, Society of Pediatric Research to travel to Okayama, Japan from the Society for Pediatric Research
5/2004	SPR Fellow's Clinical Research Award, Society of Pediatric research award for abstract titled Lung Protection with Azithromycin in the Extremely Low Birth Weight Infant
6/2005	Research Award in recognition of outstanding contributions to Pediatric Research, Pediatric Chairman
6/2005	Wethington Awardee for clinical research, Pediatric Chairman
2/2006	Finalist for the SSPR Basic Science Award, Southern Society for Pediatric Research for research titled Anti-inflammatory Effects of Azithromycin on Hyperoxic Lung Injury in Neonatal Rats
6/2006	Ross Award in Research for outstanding efforts in pediatrics, Pediatric Chair
6/2007	Warren E. Wheeler Teaching Award, Pediatric Chairman in appreciation of Outstanding Teaching from the Pediatric Housestaff
6/2008	Wethington Awardee for basic science research, Pediatric Chairman
2009-current	Named to the Best Doctors in America®
2011	Nelson County School District Distinguished Alumni Award
9/2012-8/2014	ELSO Center of Excellence for Neonatal, Pediatric, and Adult ECMO: Medical Director of Respiratory ECMO for Kentucky Children's Hospital, Extracorporeal
9/2014-8/2017	ELSO Center of Excellence for Neonatal, Pediatric, and Adult ECMO: Medical Director of Respiratory ECMO for Kentucky Children's Hospital
9/2017-8/2020	ELSO Center of Excellence for Neonatal, Pediatric, and Adult ECMO: Medical Director of ECMO for Kentucky Children's Hospital, Extracorporeal Life Support Organization
6/2019	Dr. M. Douglas Cunningham Educational Award, Pediatric Chairman for recognition of commitment to the education of Neonatal Physician Assistant Residents
9/2020-8/2023	ELSO Center of Excellence for Neonatal, Pediatric, and Adult ECMO: Director of ECMO for Kentucky Children's Hospital, Extracorporeal Life Support Organization
6/2022	Awarded the Pediatric Chairman's Teaching Award in recognition of outstanding contributions to the teaching of medical students and residents.

## **XII. PROFESSIONAL ACTIVITIES, PUBLIC SERVICE & PROFESSIONAL DEVELOPMENT**

### **Memberships**

1997-present	Fellow, American Academy of Pediatrics
1997-present	Member, Pediatric Academic Society
2005-present	Member, Kentucky Pediatric Society
2008-present	Member, AAP section on Medicine-Pediatrics

2003-present Fellow, Section on Neonatal-Perinatal Medicine (SONPM)  
2022-present Member, Kentucky Medical Association

### **Positions Held**

#### **State**

1/2007-present Member, Kentucky Newborn Screen Taskforce

#### **National**

2011-2012 Member, Extracorporeal Life Support Organization (ELSO) Logistics and Education Committee

2019-present Member, Extracorporeal Life Support Organization (ELSO) Lower Volume ECMO Working Group

#### **Advisory Groups**

7/2009-7/2010 Member, Medical Advisory Committee for the Kentucky Blood Center

#### **Journal Peer-Reviewing**

7/2011-current Ad hoc reviewer, *Pediatrics*

7/2012-current Ad hoc reviewer, *Archives of Diseases of Childhood*

7/2012-current Ad hoc reviewer, *Pediatric Research*

7/2012-current Ad hoc reviewer, *Pulmonary Pharmacology and Therapeutics*

7/2014-current Ad hoc reviewer, *The International Journal of Artificial Organs*

7/2014-current Ad hoc reviewer, *American Society of Artificial Internal Organs (ASAIO)*

2/2020-current Ad hoc reviewer, *Perfusion*

8/2023-current Ad hoc reviewer, *Journal of Physiology and Pharmacology*

#### **Public Service**

10/2022-current Pediatric Salvation Army Clinic faculty volunteer.

4/2023-current God's Pantry volunteer with the Haflinger House.

### **XIII. SPEAKING ENGAGEMENTS**

#### **Local**

##### **University of Kentucky Medical Center**

- Lexington, Kentucky
- 10/2003 University of Kentucky Ethics Committee: “Neonatal Research and the Validity of Informed Consent Obtained in the Perinatal Period.”
- 4/2004 University of Kentucky, Clinical Research Organization, Bi-annual Clinical Research Update: “Neonatal Research and the Validity of Informed Consent Obtained in the Perinatal Period.”
- 11/2004 University of Kentucky, NICU Continuing Education Unit Symposium on “Care of the Extremely Preterm Infant”: “Management and Prevention of Chronic Lung Disease in the ELBW Infant.”
- 2/2005 University of Kentucky, Pediatrics Research Group: “Use of Azithromycin for the Treatment of Bronchopulmonary Dysplasia: Pilot Data from an Animal Model and Clinical Trial.”
- 5/2005 Department of Pediatrics, Grand Rounds: Bronchopulmonary Dysplasia.
- 1/2007 Kentucky Pediatric Research Institute Research Conference: “Safety of Azithromycin in Neonates.”
- 1/2007 University of Kentucky, College of Nursing, 653-002: “Pathophysiology of Chronic Lung Disease.”
- 2/2007 Lung Biology Group at the University of Kentucky Medical Center: “Role of Caveolin-3 in Bronchial Smooth Muscle Contraction.”
- 2/2007 University of Kentucky Obstetric Residents and Faculty Teaching Conference: “Neonatal Mortality and Pulmonary Morbidities.”
- 3/2007 Pediatric Research Institute Research Conference: “The Use of the Rodent Hyperoxic Lung Injury Model: Does it represent clinical disease in neonates, pediatrics, and adult medicine.”
- 3/2007 Pediatric Residents Noon Conference: “Necrotizing enterocolitis: economic impact, epidemiology, risk factors, pathophysiology, clinical presentation, treatment and outcome.”
- 9/2007 Pediatric Residents Noon Conference: “Bronchopulmonary Dysplasia: Incidence, risk factors, pathophysiology, treatment, and long-term outcome.”
- 10/2007 Bluegrass Community and Technical College, Pediatric Respiratory Care, RRT 220: “Mechanical Ventilation and Blood Gas Management of the Neonate.”
- 1/2008 Kentucky Pediatric Research Institute: “Improving informed consent with the addition of an enhanced consent questionnaire.”
- 1/2008 Clinical and Translational Science Seminar: “Multi-Disciplinary Team Science: the Pediatric Research Incubator Experience.”
- 3/2008 Pediatric Grand Rounds: “Newborn Screening and Metabolic Diseases.”
- 10/2008 University of Kentucky Clinical Research Organization bi-annual Clinical Research Update: “Informed Consent in Vulnerable Populations: Fact or Fiction?”

3/2010 College of Public Health 740, section 401: “Newborn Screening in Kentucky.”

4/2010 Department of Pediatrics Contemporary Pediatrics meeting: “Primary Care Follow-up of the Extremely Preterm Infant.”

1/2011 Pediatric Residents Noon Conference: “Primary Care Follow-up of the Extremely Preterm Infant.”

3/2011 College of Public Health 740, section 401, Introduction to Maternal and Child Health.: “Newborn Screening in Kentucky.”

3/2011 Kentucky Children’s Hospital ECMO Team: “Coagulation during ECMO.”

3/2011 Kentucky Children’s Hospital ECMO Team: “Indications and Outcomes for Neonatal and Pediatric ECMO.” Presented March 16 and December 7, 2011.

5/2011 Kentucky Children’s Hospital Transport Team: “Advance Pediatric Life Support Skills Station.”

6/2011 NICU Intern Orientation: “Survival in the NICU.”

10/2011 Neonatology Grand Rounds: “Bronchopulmonary Dysplasia.”

11/2011 Kentucky Children’s Hospital ECMO Team: “Neonatal ECMO: Outcomes.”

12/2011 Kentucky Children’s Hospital ECMO Team: “Outcomes in ECMO.”

1/2012 M1 Class Presentation: “Transition and Pulmonary Complications in Neonates.” Presented to the M1 class for Biochemistry 819.

3/212 Neonatal Grand Rounds: “*Streptococcus bovis* infections.”

4/2012 Kentucky Children’s Hospital ECMO Team: “Neonatal and Pediatric Indications for ECMO and Long-term Outcomes.” ECMO Continuing Education Credit presented on April 11 and August 22, 2012.

7/2012 UK Mechanical Circulatory Group: “Kentucky Children’s Hospital Neonatal/Pediatric ECMO Program.”

8/2012 Pediatric Resident Noon Conference: “Meconium Aspiration Syndrome.”

8/2012 Kentucky Children’s Hospital ECMO Team: “Physiology of Diseases Treated with ECMO.”

11/2012 M1 Class Presentation: “Neonates and Urea Cycle Disorders.” Presented to M1 medical students for Biochemistry 819 course on November 9, 2012, November 5, 2013 and 2014.

11/2012 Neonatal Grand Rounds: “The Respiratory Work Group.”

11/2012 PA Resident Teaching Conference: “Pulmonary Basics and Respiratory Distress Syndrome.”

1/2013 Maternal-Fetal Medicine fellowship teaching conference: “The Preterm Infant.”

1/2013 Pediatric Resident Noon Conference: “Respiratory Distress Syndrome.”

11/2013 Pediatric Resident Noon Conference: “Bronchopulmonary Dysplasia.”

1/2014 PA Resident Teaching Conference: “Basics of ECMO.”

2/2014 M2 Class Presentation: “Bronchopulmonary Dysplasia.” Presented to M2 medical students for Respiratory System MD827 on February 2014-present. Latest presentation was on August 13, 2018.

2/2014 M2 Class Presentation: “Neonatal Lung Embryology and Surfactant Function.” Presented to M2 medical students for Respiratory System

MD827 on February 2014-present. Latest presentation was on August 8, 2018.

3/2014 Neonatology Grand Rounds: "Oxygenation and Physiology of ECMO."

11/2014 PA Resident Teaching Conference: "Neonatal ECMO: Basics, Indications, and Long-term Outcomes."

11/2014 Kentucky Children's Hospital ECMO Team: "Introduction and Physiology of ECMO."

11/2014 Kentucky Children's Hospital ECMO Team: "Pathophysiology of Diseases Treated with ECMO."

6/2015 Maternal-Fetal Medicine fellowship teaching conference: "Neonatal ECMO: Basics, Indications, and Long-term Outcomes."

2/2016 Maternal-Fetal Medicine fellowship teaching conference: "Neonatal ECMO: Basics, Indications, and Long-term Outcomes."

3/2016 Pediatric Residents Noon Conference: "Neonatal Shock."

3/2016 Kentucky Children's Hospital ECMO Team: "KCH ECMO Outcomes."

3/2016 Kentucky Children's Hospital ECMO Team: "Pathophysiology of the Diseases Treated with ECMO."

9/2016 Pediatric Residents Noon Conference: "Bronchopulmonary Dysplasia."

9/2016 Kentucky Children's Hospital ECMO Team: "Oxygenation and Physiology of ECMO."

12/2016 Neonatology Grand Rounds: "Oxygenation, ECMO Physiology, and KCH ECMO Outcomes."

3/2017 Center for Clinical and Translation Science: "Prediction of First-Extubation Success in Preterm Infants: The Value of a Spontaneous Breathing Test."

3/2017 Neonatology Grand Rounds: "KCH ECMO Team Update for 2017."

3/2017 Kentucky Children's Hospital Transport Team: "X-ray Interpretation."

2/2018 Pediatric Residents Noon Conference: "Neonatal Respiratory Failure."

2/2018 Neonatology Grand Rounds: "Congenital Lung Anomalies."

1/2019 Fellows Teaching Conference: "Biochemistry and Metabolism of Bilirubin."

1/2020 Pediatric Residents Noon Conference: "Newborn Screening: Neonatology Perspective."

1/2020 Neonatology Grand Rounds: "Pulmonary Vascular Resistance, Nitric Oxide and other Pharmacologic Therapies."

1/2020 Pediatric Residents Noon Conference: "Neonatal Chest Tube Placement and Simulation."

5/2020 Neonatal Physiology Lecture: "Bronchopulmonary Dysplasia."

6/2020 Kentucky Children's Hospital ECMO Team: "Current Challenges in Neonatal ECMO."

11/2020 Neonatology Grand Rounds: "Meconium Aspiration Syndrome."

5/2021 Neonatology Grand Rounds: "Congenital Lung Anomalies."

8/2021 Neonatology Fellows Teaching Conference: "Neonatal Oxygenation and Delivery. "

11/2021 Kentucky Children's Hospital ECMO Team: "Neonatal ECMO: Indications, Techniques, Risks and Outcomes."

12/2021 PA Resident Lecture: "Basics of Neonatal ECMO."

1/2022 PA Resident Lecture: “Meconium Aspiration Syndrome.”  
 1/2022 Medical Student Simulation Teacher and Organizer: Teaching medical students Neonatal and Pediatric intubation skills.  
 2/2022 Pediatric Residents Noon Conference: “The Neonatology Perspective on Newborn Screening.”  
 8/2022 Neonatology Grand Rounds: “Neonatal ECMO: Indications, Technique, and Outcomes.”  
 8/2022 Pediatrics Residents Noon Conference: “Neonatal Shock.”  
 10/2022 Pediatrics Residents Noon Conference: “Necrotizing Enterocolitis.”

**State/Regional**

**University of Kentucky Medical Center**

Lexington, Kentucky

2/2008 Corbin Pediatrics Group: “Newborn Screening and Metabolic Diseases.”  
 2/2008 Frankfort Pediatrics Group: “Newborn Screening and Metabolic Diseases.”  
 3/2008 Georgetown Pediatrics Group: “Newborn Screening and Metabolic Diseases.”  
 4/2008 Neonatal Nurse Leaders Annual Regional Conference: “Care of the Late Preterm Infant.”  
 6/2009 Kentucky Perinatal Association: “Expanded Newborn Screening in Kentucky: Has it made a difference?”  
 9/2009 Hardin Memorial Hospital Continuing Education: “Percutaneous Chest Tube Placement in Neonates and Simulation Using the Chicken Chest Tube Model.”  
 11/2009 Regional Association of Women’s Health Obstetric and Neonatal Nurses: “Expanded Newborn Screening in Kentucky: Has it made a difference?”  
 10/2020 Community Grand Rounds: “Neonatal Pulmonary Hypertension.”  
 10/2022 Murray State Pre-Medical Society: “Basics of ECMO.”  
 10/2023 Murray State Pre-Medical Society: “Basics of ECMO.”

**National/International**

**University of Kentucky Medical Center**

Lexington, Kentucky

4/2004 Plenary presentation at the Japan Pediatric Society annual meeting in Okayama, Japan: “Lung Protection with Azithromycin in the Extremely Low Birth Weight Infant.”  
 6/2020 Pediatric Grand Rounds at the University of Mississippi Medical Center. Presented remotely via WEBEX: “Bronchopulmonary Dysplasia.”



## **XIV. RESEARCH & INTELLECTUAL CONTRIBUTIONS**

### **A. PUBLICATIONS**

#### **Peer-Reviewed Original Research in Professional, Scientific or Educational Journals**

1. Randall DC, Brown DR, Ardell JL, Randall WC, Olmstead ME, **Ballard HO**, Kilgore JM. Surgical removal of dorsal atrial ganglionated plexus potentiates conditional tachycardia in dog. *Integrative Physiological and Behavioral Science*. 1996; 31(2): 187-188.
2. **Ballard HO**, Shook LA, Desai NS, Anand, KJS. Neonatal Research and the Validity of Informed Consent Obtained in the Perinatal Period. *J Perinatol*. 24 (7), July 2004.
3. **Ballard HO**, Anstead M, Shook LA. Azithromycin in the extremely low birth weight infant for the prevention of Bronchopulmonary Dysplasia: a pilot study. *Respir Res*. 2007 Jun 5;8:41.
4. **Ballard HO**, Bernard P, Qualls J, Shook LA, Everson W. Azithromycin Protects Against Hyperoxic Lung Injury in Neonatal Rats. *J Invest Med*. 2007 Sep;55(6):299-305.
5. **Ballard HO**, Shook, LA, Lain, K, Fox L, Crombleholme, TH. An embolic complication in a Donor Twin with severe Twin-Twin Transfusion Syndrome after Fetoscopic Intervention. *J Perinatol*. 2009 Mar;29(3):250-1.
6. Bernard PA, Makin C, Hongying D, **Ballard HO**. Variability of ASA Physical Status Class Assignment among Pediatric Sedation Practitioners , *Int J Adolesc Med Health*. 2009 Apr-Jun;21(2):213-20 .
7. Hayes D Jr, Meyer KC, **Ballard HO**. Revisiting an Old Therapy for Tuberculosis. *Respir Care*. 2009 Apr;54(4):542-3
8. **Ballard HO**, Shook LA, Iocono J, Turner MD, Marino S, Bernard PA. Novel animal model for teaching chest tube placement. *J Ky Med Assoc*. 2009 Jun;107(6):219-21.
9. Hayes D Jr, Iocono JA, Bennett J, Lachman DC, **Ballard, HO**. Epistaxis due to Wegener's granulomatosis in a pediatric patient. *Am J Otolaryngol*. 2009 Jun 29
10. Hayes D Jr, Kanga JF, Anstead MI, Warner RT, Kuhn RJ, **Ballard HO**. Inhaled morphine for palliation of dyspnea in end-stage cystic fibrosis. *American Journal of Health-Sys Pharm*. 2010 May 1; 67(9):737-40.
11. Hayes D Jr, Roessler KM, Davenport SM, Collins PB, **Ballard HO**. Dyspnea in a lung transplant recipient. *Respiratory Care*. 2010 May; 55(5):626-9.
12. Hayes, D Jr, Kriss VM, Iocono JA, Dixon BJ, Collins PB, **Ballard HO**. Varicose bronchiectasis and bronchopulmonary dysplasia. *Respiratory Care* 2009;54:1493-5.
13. Hayes D Jr, Feola DJ, Murphy BS, Shook LA, Ballard HO. Pathogenesis of Bronchopulmonary Dysplasia. *Respiration*. 2010; 79(5): 425-36.
14. Kakavand B, **Ballard HO**, Disessa TG. Frequent Ventricular Premature Beats in Children with a Structurally Normal Heart: A Cause for Reversible Left Ventricular Dysfunction? *Pediatric Cardiology* 2010 May 31:986–990.

15. Meadows JT, Shook LA, **Ballard HO**, Bernard PA. Acyclovir Use in Sick Infants. *Pediatric Emergency Care*. 2010 July; 26(7): 495-98.
16. **Ballard HO**, Shook LA, Bernard PA, Anstead MI, Kryscio R, Desai NS, Bada H, Hayes D Jr. Use of Azithromycin for the Prevention of Bronchopulmonary Dysplasia: A Randomized, Double-blind, Placebo Controlled Trial. *Pediatr Pulmonol*. 2011 Feb; 46(2): 111-8.
17. Hayes D Jr, Meadows JT Jr, Murphy BS, Feola DJ, Shook LA, **Ballard HO**. Pulmonary function outcomes in bronchopulmonary dysplasia through childhood and into adulthood: Implications for primary care. *Prim Care Respir J*. 2011, June; 20(2): 128-33.
18. **Ballard HO**, Shook LA, Iocono JA, Hayes D Jr, Bernard PA. Improving the Process of Informed Consent for Neonatal Research. *Hastings Center Report: IRB Ethics and Human Research*. 2011 May-June; 33 (3): 12-17.
19. Bernard PA, **Ballard HO**, Schneider D. Current approaches to pediatric heart catheterizations. *Pediatric Reports* 2011; volume 3:e23
20. Hayes D Jr., Kukreja J, Tobias JD, **Ballard HO**, Hoopes CW. Ambulatory venovenous extracorporeal respiratory support as a bridge for cystic fibrosis patients to emergent lung transplantation. *J of Cyst Fibros* 2012, Jan; 11(1): 44-45.
21. Skinner S, Davenport D, **Ballard HO**, Turner D, Zwischenberger J. Improved Survival in Venovenous versus Venoarterial Extracorporeal Membrane Oxygenation for Pediatric Non-Cardiac Sepsis Patients: A Study of the Extracorporeal Life Support Organization Registry. *J Pediatr Surg* 2012, Jan; 47(1): 63-7.
22. Meadows John T Jr, Kopp BT, Shook LA, **Ballard HO**, Hayes D Jr. Elevated high-sensitivity C-reactive protein in preterm infants with pulmonary colonization with *Ureaplasma*. *J Thorac Dis* 2013, Jun;5(3):223-7.
23. Daniel JM, Bernard P, Skinner S, Bhandary P, Ruzic A, Bacon MK, and **Ballard HO**. Hollow Fiber Oxygenator Composition Has a Significant Impact on Failure Rates in Neonates on Extracorporeal Membrane Oxygenation: A Retrospective Analysis. *J Pediatr Intensive Care* 2018;7:7-13.
24. Bhandary P, Daniel JM, Skinner SC, Bacon MK, Hanna M, Bauer JA, Giannone P, and **Ballard HO**. Case series of therapeutic hypothermia for neonatal hypoxic ischemic encephalopathy during extracorporeal life support. *Perfusion* 2020; Jan:1-7.
25. Walther Hallie, Schadler Aric, Garlitz Karen, Bauer John A., Kohler Lindsay, Waldsmith Erika, and **Ballard Hubert O**. Impact of *in utero* Drug Exposure on Neonates Requiring ECMO: A Retrospective Cohort Study. *Frontiers in Pediatrics/ Neonatology section*. 2023; March. PMID: 37051432.
26. Ajour Maher, Alsiraj Yasir, Schadler Aric, Huang Hong, Schanbacher Brandon, **Ballard Hubert O**, Bauer John A. *Ureaplasma*, Azithromycin, and Varying Definitions of BPD in Preterm Infants: Challenges for Clinical Care and Drug Development. Accepted for publication to the *Journal of Clinical Trials*. Accepted for publication on July 17, 2023.

27. Chalhoub G, Daniel J, Skinner S, Zwischenberger J, Bauer J, **Ballard HO**. Placement of the Avalon® cannula in the right atrium for neonatal ECMO: a case series. Submitted to *Perfusion*. Manuscript# PRF-23-0066. Review in progress.

### **Non-Peer-Reviewed Articles, Editorials, Reviews in Professional, Scientific or Educational Journals**

#### **Books, Book Chapters, Monographs**

1. **Ballard HO**, Desai NS, Cunningham MD. Apnea and Periodic Breathing. *Neonatology: Management, Procedures, On-Call Problems, Diseases, and Drugs*. 5<sup>th</sup> Edition. New York, NY: Lange Medical Books/McGraw-Hill; 2004: 530-534.
2. **Ballard HO**, Desai NS, Cunningham MD. Apnea and Periodic Breathing. *Neonatology: Management, Procedures, On-Call Problems, Diseases, and Drugs*. 6<sup>th</sup> Edition. New York, NY: Lange Medical Books/McGraw-Hill; 2009: 411-416.
3. **Ballard HO**, Cunningham MD. Chapter 14: Newborn Screening. *Neonatology: Management, Procedures, On-Call Problems, Diseases, and Drugs*. 7<sup>th</sup> Edition. New York, NY: Lange Medical Books/McGraw-Hill; 2013: 176-180.

#### **Letters, Book Reviews, Lay Press**

1. Anand KJS, **Ballard HO**, Shook LA, Desai NS. Consent for Clinical Research on Neonates, letter to editor. *Arch. Dis. Child.*, electronic pages July 12, 2004.
2. **Ballard, HO**. Childhood asthma linked to infection during pregnancy. *Advances & Insights*. September 24, 2010.
3. **Ballard, HO**. Potential treatment may help preemies avoid lung condition. *Lexington Herald-Leader*. May 1, 2011.

## **XIV. RESEARCH & INTELLECTUAL CONTRIBUTIONS - *continued***

### **B. ABSTRACT PRESENTATIONS**

#### **Local/State/Regional Meetings**

1. 9/2005. **Ballard HO**, Shook LA. Effects of Azithromycin on Hyperoxic Lung Injury in Neonatal Rats. Mead Johnson Nutritionals Midwest Conference on Perinatal Research.
2. 3/2006. **Ballard HO**, Qualls J, Shook LA, Everson W. Anti-inflammatory Effects of Azithromycin on Hyperoxic Lung Injury in Neonatal Rats. Pulmonary and Critical Care medicine session of the Southern Regional Meeting and the Plenary session Southern Society for Pediatric Research Annual Meeting in Atlanta, GA. Podium. *J Invest Med.* 54 (S1):S232, March 2006.
3. 4/2012. Irene Hong-McAtee, Chris Nelson, **Hubert O. Ballard**, Zoran Danov, Rebecca . Dutch, Luke Bradley, Lu-Yuan Lee, David Watt. Integrating Basic Science into the 4th Year Pediatric Clerkship. Presentation at the Southern Group on Educational Affairs in Lexington, KY. Poster. (Presenter: I. Hong-McAtee.)
4. 2/2018. Davidson LN, Roark T, Shahid M, Bauer JA, Wright L, Cunningham MD, and **Ballard H**. Utilization of a Spontaneous Breathing Test for Assessing Extubation Readiness in Preterm Infants: Timing Matters. Presentation for the Southern Society of Pediatric Research in New Orleans, LA. Podium. (Presenter: L. Davidson.)
5. 4/2023. Williams KS, Huang H, Ajour M, Alsiraj Y, Schadler A, **Ballard HO**, Feola DJ, Bauer JA. Drug Development for Preterm Infant Lung Disease: Challenges and Opportunities. Therapeutics, Outcomes, Discovery & Delivery (TODD) Symposium in Therapeutic Manipulation of Immune Function at the University of Kentucky College of Pharmacy Poster Symposium, April 12, 2023. (Presenter: KS Williams.)
6. 4/2023. Walther H, Schadler A, Garlitz K, Bauer JA, Kohler L, Waldsmith E, **Ballard HO**. Impact of in utero Drug Exposure on Neonates Requiring ECMO: A Retrospective Cohort Study. Substance Use Research Event (SuRE) at the University of Kentucky Gatton Student Center, April 24, 2023. (Presenter: H. Walther.)

#### **National/International Meetings**

1. 5/2003. **Ballard HO**, Shook LA. Neonatal Research and the Validity of Informed Consent Obtained in the Perinatal Period. Society for Pediatric Research Annual Meeting in Seattle, WA. Poster. *Ped Res.* 53(4):452A, April 2003.
2. 6/2003. **Ballard HO**, Shook LA. Use of Azithromycin for Lung Protection in Extremely Low Birth Weight Infants. Podium. 62<sup>nd</sup> Perinatal and Developmental Medicine Symposium on “The New BPD” in Aspen, CO.

3. 9/2003. **Ballard HO**, Shook LA, Anstead MI. Poster presentation at the annual meeting of the Irish and American Pediatric Society in Ottawa, Canada. Use of Azithromycin for Lung Protection in Extremely Low Birth Weight Infants. Poster. Travel Grant Award.
4. 5/2004. **Ballard HO**, Shook LA, Anstead MI. Use of Azithromycin for Lung Protection in Extremely Low Birth Weight Infants. Society for Pediatric Research Annual Meeting in San Francisco, CA. Poster. *Ped Res*. 55(4):456A, April 2004.
5. 4/2005. **Ballard HO**, Shook LA. Growth and Developmental Follow-up in Extremely Low Birth Weight Infants Treated with Azithromycin. Society for Pediatric Research Annual Meeting in Washington, DC. Poster. *Ped Res*. April 2005.
6. 4/2006. **Ballard HO**, Qualls J, Shook LA, Everson, W. Anti-inflammatory Effects of Azithromycin on Hyperoxic Lung Injury in Neonatal Rats. Pediatric Academic Society for Pediatric Research Meeting in Philadelphia, PA. Poster. *Ped Res*. April 2006.
7. 5/2007. **Ballard HO**, Shook LA. Safety of Azithromycin in Neonates. Pediatric Academic Society for Pediatric Research Meeting in Toronto, Canada. Poster. *Ped Res*, April 2007.
8. 5/2007. Bernard PA, Makin CE, Hongying D, **Ballard HO**. Variability of ASA Physical Status Class Assignment among Pediatric Sedation Practitioners. pediatric Academic Society for Pediatric Research Meeting in Toronto, Canada. Poster. (Presenter: P. Bernard). *Ped Res*, April 2007.
9. 5/2008 **Ballard HO**, Bernard PA, Shook LA. Improving Parental Recall of Informed Consent for Neonatal Research. Pediatric Academic Societies' Annual Meeting in Honolulu, Hawaii. Poster. *Ped Res*, April 2008.
10. 5/2008 **Ballard HO**, Bernard PA, Shook LA. Use of a Parent Questionnaire as a Component of Informed Consent. Pediatric Academic Societies' Annual Meeting in Honolulu, Hawaii. Poster. *Ped Res*, April 2008.
11. 4/2009. Hong-McAtee I, **Ballard HO**, Nelson C. Initiating a Basic Science Curriculum in the Pediatric 4<sup>th</sup> Year Clerkship. Council on Medical Student Education in Pediatrics (COMSEP) Annual Meeting, Baltimore, MD. Poster. (Presenter: I. Hong-McAtee).
12. 5/2009. **Ballard HO**, Bernard P, Whitehead V, Grider D, England J, Tucker M, Shook L. Determining the Incidence of *Ureaplasma* spp. and Its Role in the Development of Bronchopulmonary Dysplasia. Society of Pediatric Research meeting in San Francisco, CA. Poster. *Ped Res*, April 2009.
13. 5/2009. **Ballard HO**, Bernard P, Whitehead V, Grider V, England J, Tucker M, Shook L. Use of Azithromycin for the Early Treatment of *Ureaplasma* spp. in Preterm Infants: A Randomized, Double-blind, Placebo controlled Trial. Annual meeting for Society of Pediatric Research in San Francisco, CA. Poster. *Ped Res*, April 2009.
14. 5/2009. **Ballard HO**, Bernard P, Hayes D Jr, Anstead M, Kryscio R, Desai N, Shook LA. Use of Azithromycin for the Prevention of Bronchopulmonary Dysplasia: A Randomized, Double-blind, Placebo Controlled Trial. Annual meeting for The American Thoracic Society in San Diego, CA. Poster. *Proceedings to the American Thoracic Society*. May 2009.

15. 5/2009. **Ballard HO**, Bernard P, Hayes D Jr , Anstead M, Kryscio R, Desai N, Shook LA. Use of Azithromycin for the Prevention of Bronchopulmonary Dysplasia: A Randomized, Double-blind, Placebo Controlled Trial. Annual meeting for the Society of Pediatric Research in San Francisco, CA. Poster. *Ped Res*, April 2009.
16. 9/2009. Skinner S, Grenier M, **Ballard HO**, Pulito A, Iocono J, Zwischenberger J. 20<sup>th</sup> Annual ELSO conference at the University of Michigan. Poster. (Presenter: S. Skinner.) *ASAIO Journal*, September 2009.
17. 10/2010. Hayes D Jr, Buckley C, Jennifer Schilling, Cecil LA, Wilson E, Slover MW, **Ballard HO**. Kohl's UK Asthma Program: Development of a Community-based Educational Program on Childhood Asthma & Secondhand Smoke Exposure. Presented at the annual American Academy of Pediatrics National Conference & Exhibition, San Francisco, CA. Poster. (Presenter: D. Hayes)
18. 3/2011. Hong-McAtee I, Nelson C, **Ballard HO**, Hayes D Jr, Dutch R, Bradley L, Lee LY, Turco S. Integrating Basic Science Into the 4<sup>th</sup> Year Pediatric Clerkship. Presented at the COMSEP Meeting in San Diego, CA. Poster. (Presenter: I. Hong-McAtee)
19. 5/2011. Skinner S, Davenport D, **Ballard HO**, Turner D, Zwischenberger J. Improved Survival in Venovenous versus Venoarterial Extracorporeal Membrane Oxygenation for Pediatric Non-Cardiac Sepsis Patients: A Study of the Extracorporeal Life Support Organization Registry. Presented at the annual American Pediatric Surgical Association (APSA) Meeting in Palm Springs, CA. Platform. (Presenter: S. Skinner.)
20. 4/2012. Ford SL, Shook LA, Robinson T, **Ballard HO**. Growth and Neurodevelopmental Outcome in Premature Neonates Treated with Azithromycin. Presented at the PAS meeting in Boston, MA. Poster. (Presenter: S. Ford.) *Ped Res*, April 2012.
21. 10/2012. Shook L, Wells S, McGee L, Isaacs K, and **Ballard HO**. Use of 8-step Problem Solving to Decrease Coagulase Negative Staphylococcus Infections in the Neonatal Intensive Care Unit. Annual Meeting & Quality Congress in Chicago, IL. Poster. (Presenter: L. Shook.)
22. 4/2013. Ford SL, Shook LA, Whitehead V, Grider D, and **Ballard HO**. Impact of Standardized Blood Culture Collection on Coagulase Negative Staphylococcus (CONS) Positive Cultures in the NICU. Presentation at the annual PAS meeting in Washington DC. Poster. (Presenter: S. Ford.) *Ped Res*, April 2013.
23. 5/2013. Scottie Day, Kelli Trent, John Draus, **Hubert O. Ballard**, and Deanna Todd-Tzanetos. Abdominal Compartment Syndrome Relieved by Percutaneous Drainage In an Infant with Critical Pertussis Supported on Venovenous Extracorporeal Membrane Oxygenation. Presentation at the annual American Thoracic Society Meeting in Philadelphia, Pennsylvania. Poster. (Presenter: S. Day.)
24. 5/2013. Todd-Tzanetos D, Skinner S, Lowdenback R, Bernard P, and **Ballard HO**. Utilization of Thromboelastography to Diagnose Coagulation Defects in a Neonate Requiring Extracorporeal Membrane Oxygenation Life Support. Presentation at the Euro ELSO meeting in Stockholm, Sweden. Poster. (Presenter: D. Todd-Tzanetos.) *International Journal of Artificial Organs*. 36(4), April 2013.

25. 5/2013. Skinner S, Todd-Tzanetos D, Bernard P, and **Ballard HO**. Use of Thromboelastography to Detect Underlying Coagulopathy on Extracorporeal Life Support. Presentation at the Euro ELSO meeting in Stockholm, Sweden. Poster. (Presenter: S. Skinner.) *International Journal of Artificial Organs*, 36(4), April 2013.
26. 5/2013. Day S, Skinner S, Trent K, Draus J, **Ballard HO**, and Todd-Tzanetos D. Abdominal Compartment Syndrome Relieved by Percutaneous Drainage In an Infant with Critical Pertussis Supported on Venovenous Extracorporeal Membrane Oxygenation. Presentation at the Euro ELSO meeting in Stockholm, Sweden. Poster. (Presenter: S. Day.) *International Journal of Artificial Organs*, 36(4), April 2013.
27. 10/2013. Roark, Timothy H, Jordan, Genine, Bendix, Christy, Wright, Lisa, and **Ballard, Hubert O**. Standardizing a Method for Safely and Effectively Predicting Successful Extubation in Neonates, Presentation at the Vermont Oxford Network Annual Meeting and Quality Congress, Chicago, IL. Poster. (Presenter: T. Roark.)
28. 11/2013. Roark, Timothy H, Jordan, Genine, Bendix, Christy, Wright, Lisa, and **Ballard, Hubert O**. Standardizing a Method for Safely and Effectively Predicting Successful Extubation in Neonates, Presentation at the American Association of Respiratory Care National Conference Anaheim, CA. Poster. (Presenter: T. Roark.)
29. 2/2014. Ashwin Krishna, Michael Wittkamp, Asha Sheno, Sean Skinner, Joseph Iocono, and **Hubert Ballard**. Sciatic Nerve Mononeuropathy as a Complication of VV ECMO. Presentation at the 30<sup>th</sup> Annual Children's National Symposium: ECMO and the Advanced Therapies for Respiratory Failure in Keystone, CO. Poster. (Presenter: A. Krishna.)
30. 9/2014. Skinner, S. C., **Ballard HO**, Krishna, A. S., Wittkamp, M. L., Iocono, J. A., Maul, E. C. Effectiveness of an ECMO simulation program in a smaller volume center. Presented at the ELSO/AmSECT meeting in Ann Arbor, MI. Poster. (Presenter: S. Skinner.) *ECMO and Advance Therapies for Respiratory Failure Meeting Proceedings*.
31. 11/2014. Khan, S., Carpenter, A., Hartley, K., Whitehead, V., Grider, D., Dang, S., **Ballard HO**, Giannone, P. J., Shook, L. A. Reduction of Admission Hypothermia in Very Low Birth Weight Infants (VLBW). Presented at the VON Quality Improvement congress in Chicago, IL. Poster. (Presenter: S. Khan.) *Vermont Oxford Network Quality Conference 2014 Proceedings*.
32. 11/2014. Wright, L., **Ballard HO**, Coleman, H., Hanna, M., Roark, T., Shook, L. A. Improved Rate of Bronchopulmonary Dysplasia through Systematic Standardized Care Changes: Results from the Respiratory Work Group Multidisciplinary Team. Presented at the VON Quality Improvement congress in Chicago, IL. Poster. (Presenter: L. Wright.) *Vermont Oxford Network Quality Conference 2014 Proceedings*.
33. 12/2014. Wright, L., **Ballard HO**, Shook, L. A. Results from A Multidisciplinary Team Led By An RT/ MD DYAD. Presented at the AARC Open Forum in Las Vegas, NV. Poster. (Presenter: L. Wright.) *Journal of Respiratory Care*, 59(10), OF79.
34. 4/2015. Hanna M, Wright L, Roark T, **Ballard HO**, Shook L. Improved Rate of Bronchopulmonary Dysplasia through Systematic Standardized Care Changes: Results from

- the Respiratory Work Group Multidisciplinary Team. Presentation at the PAS meeting in San Diego, CA. Poster. (Presenter: M. Hanna.) *Ped Res*, April 2015.
35. 5/2015. Skinner S, **Ballard HO**, Krishna A, Wittkamp M, Iocono J, Maul E. Evaluation of an innovative ECMO course at a smaller volume ECMO center. Presentation at the Euro ELSO meeting in Regensburg, Germany. Poster. (Presenter: S. Skinner.)
  36. 5/2015. Skinner S, **Ballard HO**, Krishna A, Wittkamp M, Ruzic A, Iocono J. Use of a scorecard to maintain excellent neonatal ECMO outcomes. Presentation at the Euro ELSO meeting in Regensburg, Germany. Poster. (Presenter: S. Skinner.)
  37. 5/2015. Skinner S, **Ballard HO**, Krishna A, Wittkamp M, Ruzic A, Iocono J. Excellent outcomes in a small volume neonatal/pediatric ECMO center. Presentation at the Euro ELSO meeting in Regensburg, Germany. Poster. (Presenter: S. Skinner.)
  38. 2/2016. Bhandary P, Daniel J, Bacon MK, Skinner S, and **Ballard HO**. Case Series of Therapeutic Whole Body Hypothermia on ECMO in Neonates. Presentation for the 32nd Annual Children's National Symposium: ECMO and the Advanced Therapies for Respiratory Failure in Keystone, CO. Podium. (Presenter: P. Bhandary.) *ECMO and Advance Therapies for Respiratory Failure Meeting Proceedings*.
  39. 2/2016. Daniel JM, Bhandary P, Ruzic A, Bacon MK, and **Ballard HO**. Failure Rates Associated with Polymethylpentene Coated and non-Polymethylpentene Coated Oxygenators in Neonates Undergoing non-Cardiac Extracorporeal Support. Presentation for the 32nd Annual Children's National Symposium: ECMO and the Advanced Therapies for Respiratory Failure, Keystone, CO. Podium. (Presenter: J. Daniel.) *ECMO and Advance Therapies for Respiratory Failure Meeting Proceedings*.
  40. 6/2016. Daniel, John.; Bhandary, Prasad; Ruzic, Ana; Skinner, Sean; Bacon, Matthew; Bernard, Philip; and **Ballard, Hubert**. Polymethylpentene hollow fibers ECLS oxygenators have a significantly lower failure rate than polypropylene hollow fiber oxygenators in neonates undergoing non-cardiac extracorporeal support: a retrospective analysis from a level IV NICU. Presentation at the 5th International European Extracorporeal Life Support Congress. Glasgow, Scotland, United Kingdom. Poster. (Presenter: J. Daniel.) Travel Award.
  41. 2/2017. Daniel J, Bacon M, Bernard P, Slone A, Montgomery K, Carpenter A, Skinner S, Hanna M, Bhandary P, Giannone P, **Ballard HO**. Coagulation Management and Blood Conservation in Neonates on ECMO: The Potential Value of an Anti-Xa Based Protocol. Presentation for the 33rd Annual Children's National Symposium: ECMO and the Advanced Therapies for Respiratory Failure in Keystone, CO. *ECMO and Advance Therapies for Respiratory Failure Meeting Proceedings*.
  42. 2/2017. Daniel J, Montgomery K, Slone A, Bernard P, Skinner S, Bauer J, Bhandary P, **Ballard HO**. Prediction of ECMO Duration in Neonates. Presentation for the 33rd Annual Children's National Symposium: ECMO and the Advanced Therapies for Respiratory Failure in Keystone, CO. Poster. (Presenter: J. Daniel.)
  43. 2/2017. Slone A, Daniel J, Bacon M, Bernard P, Hanna M, Bauer J, Chishti A, Bhandary P, Giannone P, **Ballard HO**. Outcomes for Use of CRRT in Neonatal Non-Cardiac ECMO.



- Presentation for the 33rd Annual Children's National Symposium: ECMO and the Advanced Therapies for Respiratory Failure in Keystone, CO. Poster. (Presenter: A. Slone.) *ECMO and Advance Therapies for Respiratory Failure Meeting Proceedings*.
44. 2/2017. Daniel J, Montgomery K , Shook L, Bernard P, Slone A, Bauer J, Hanna M, Bhandary P, Giannone P, **Ballard HO**. Decision- Making Criteria for ECMO Utilization in Infants: Review of a Single Center's Experience. Presentation for the 33rd Annual Children's National Symposium: ECMO and the Advanced Therapies for Respiratory Failure in Keystone, CO. Poster. (Presenter: J. Daniel.) *ECMO and Advance Therapies for Respiratory Failure Meeting Proceedings*.
  45. 5/2017. Daniel J, Bacon M, Bernard P, Slone A, Montgomery K, Carpenter A, Skinner S, Hanna M, Bhandary P, Giannone P, **Ballard HO**. Coagulation Management and Blood Conservation in Neonates on ECMO: The Potential Value of an Anti-Xa Based Protocol. Presentation for Pediatric Academic Society meeting in San Francisco, CA. Poster. (Presenter: J. Daniel.) *Ped Res*, April 2017.
  46. 2/2018. Slone AL, Ruzic A, Carpenter A, Collins J and **Ballard HO**. Provider Attitudes and Perceptions Regarding Sedation for Neonates on Non-cardiac ECMO. Presentation for the 34<sup>th</sup> Annual Children's National Symposium: ECMO and the Advanced Therapies for Respiratory Failure in Keystone, CO. Poster. (Presenter: A. Slone.) *ECMO and Advance Therapies for Respiratory Failure Meeting Proceedings*.
  47. 4/2018. Davidson LN, Roark T, Shahid M, Bauer JA, Wright L, Cunningham MD, and **Ballard, HO**. Utilization of a Spontaneous Breathing Test for Assessing Extubation Readiness in Preterm Infants: Timing Matters. Presentation for Pediatric Academic Societies Meeting in Toronto, Canada. Poster. (Presenter: L. Davidson.) *Ped Res*, April 2018.
  48. 4/2019. Slone A, Schadler A, Bauer J, Bernard P, and **Ballard HO**. Use of CRRT for neonatal non-cardiac ECLS. Presentation for Pediatric Academic Societies 2019 Meeting in Baltimore, MD. Poster. (Presenter: A. Slone.) *Ped Res*, April 2019
  49. 9/2019. **Ballard HO**, Shadler A, Garlitz K, Grider D, Hanna M, Bhandary P, Bauer J, Giannone P, and Bernard P. Impact of Neonatal Abstinence Syndrome on Neonates Requiring ECMO Therapy. Presentation for the annual ELSO Meeting in Austin, TX. Poster. *ASAIO Journal*, September 2019.
  50. 9/2019. Struewing K, Moore BJ, Mamoodi L, McCoy M, Bauer JA, Giannone P, and **Ballard HO**. A Case of Mucormycosis in a Neonatal ECMO Patient. Presentation for the ELSO Meeting in Austin, TX. Poster. (Presenter: K. Struewing.) *ASAIO Journal*, September 2019.
  51. 4/2022. Ajour M, Schadler A, Huang H, Schanbacher BL, **Ballard HO**, Bauer JA. Ureaplasma, Azithromycin, and varying definitions of BPD in preterm infants: challenges for clinical care and drug development. Presentation for Pediatric Academic Societies 2022 Meeting in Denver, CO. (Presenter: M. Ajour) *Ped Res*, April 2022
  52. 5/2022. Ellis M, Bacon M, Durbin SR, Thakkar P, **Ballard HO**. ECMO Care Model: Multidisciplinary Team in a Standardized Location. Presentation for 32<sup>nd</sup> annual Specialist

Education in Extracorporeal Membrane Oxygenation (SEECMO) meeting in Nashville, TN. (Presenter M. Ellis)

53. 11/2022. Ajour M, Schadler A, Alsiraj Y, Huang H, Schanbacher B, **Ballard HO**, Bauer J. Ureaplasma, Azithromycin, and varying definitions BPD in preterm infants: challenges for clinical care and drug development. Platform (oral) presentation at the AAP Section on Neonatal-Perinatal Medicine, 100<sup>th</sup> Perinatal & Developmental Medicine Symposium: “50 Years of Physicians in Training and Scientific Advancements in Neonatology.” November 15-18, 2022, Clearwater Beach, FL.
54. 2/2023. Vieth M, Schadler A, Bauer J, **Ballard H**, Thakkar P. Congenital Diaphragmatic Hernia Outcomes in a Low-Volume Center. Presentation for the 39<sup>th</sup> Annual Children’s National Symposium: ECMO and the Advanced Therapies for Respiratory Failure in Keystone, CO. Poster. (Presenter: M. Vieth.) *ECMO and Advance Therapies for Respiratory Failure Meeting Proceedings. ASAIO Journal*, April 2023, vol 69: issue 1.
55. 6/2023. Vieth M, Schadler A, Bauer J, **Ballard H**, Thakkar P. Congenital Diaphragmatic Hernia Outcomes in a Low-Volume Center. 12<sup>th</sup> Annual Southeastern Pediatric Research Conference at Emory/Children’s Healthcare of Atlanta. Poster. (Presenter: M. Vieth.)
56. 2/2024. Slaughter J, Sites J, Ballard H, Bauer J, Schadler A, and Severyn N. Comparison of the Oxygenation Index and the Oxygen Saturation Index as Clinical Indicators for Neonatal ECMO. Presentation for the 40<sup>th</sup> Annual Children’s National Symposium: ECMO and the Advanced Therapies for Respiratory Failure in Keystone, CO. Poster. (Presenter: John Slaughter, UK COM class of 2026) *ECMO and Advance Therapies for Respiratory Failure Meeting Proceedings. ASAIO Journal*, April 2024, vol 69: issue 1.
57. 2/2024. Grigsby C, Severyn N, Ballard H, Bauer J, Schadler A, and Sites J. Comparison of sedation scales during neonatal ECMO: RASS vs. N-PASS. Presentation for the 40<sup>th</sup> Annual Children’s National Symposium: ECMO and the Advanced Therapies for Respiratory Failure in Keystone, CO. Poster. (Presenter: Charlie Grigsby, UK COM class of 2020) *ECMO and Advance Therapies for Respiratory Failure Meeting Proceedings. ASAIO Journal*, April 2024, vol 69: issue 1.

## **XIV. RESEARCH & INTELLECTUAL CONTRIBUTIONS - *continued***

### **C. SPONSORED RESEARCH PROJECTS, GRANT & CONTRACT ACTIVITIES**

#### **Active**

**Project Title:** Delayed umbilical cord clamping and indomethacin in preterm infants.  
**Project Number:** IRB#14-0445  
**Principal Investigator(s):** Peter Giannone, MD, John Bauer, PhD  
**Role in Project:** Co-Investigator  
**Effort:** 0% salary support  
**Institution/University:** University of Kentucky NICU  
**Source of Funding:** NIH RO1  
**Duration of Project:** NIH funding: 1/1/2014-12/31/2019, IRB: 08/6/2014-ongoing  
**Total Award:** \$3.4 million  
**Grant Number:** HD070792-06

**Project Title:** Safety of furosemide in premature infants at risk of bronchopulmonary dysplasia.  
**Project Number:** IRB#16-0159  
**Principal Investigator(s):** Mina Hanna, MD  
**Role in Project:** Co-Investigator  
**Effort:** 0% salary support  
**Institution/University:** University of Kentucky NICU  
**Source of Funding:** NICHD  
**Duration of Project:** 8/4/2016-current  
**Total Award:**  
**Grant Number:** 3200000867

**Project Title:** KCH ECMO Simulation Cart  
**Project Number:** n/a  
**Principal Investigator(s):** H. Ballard, MD, KCH ECMO Team  
**Role in Project:** Principal Investigator  
**Effort:** 0% salary support  
**Institution/University:** University of Kentucky NICU/PICU/Simulation Lab  
**Source of Funding:** CMN Grant  
**Duration of Project:** 02/2020-current  
**Total Award:** \$3,000  
**Grant Number:** n/a

**Project Title:** A Phase 3, Multicenter, Randomized, Partially Blinded, Palivizumab- Controlled Study to Evaluate the Safety, Efficacy, and Pharmacokinetics of MK-1654 in Infants and Children at Increased Risk for Severe RSV Disease.  
**Project Number:** IRB# 75677

**Principal Investigator(s):** Mark Wurth, MD, PhD (site PI), Hubert O. Ballard, MD and John Bauer, PhD  
**Role in Project:** Co-PI  
**Effort:** 5% salary support  
**Institution/University:** University of Kentucky  
**Source of Funding:** Extramural (Merck & Co, Inc.)  
**Duration of Project:** 01/2022-8/2024  
**Total Award:** \$360,022.56  
**Grant Number:** n/a

**Project Title:** Safety of Sildenafil in Premature Infants with Severe Bronchopulmonary Dysplasia (SILDI-SAFE).  
**Project Number:** IRB#  
**Principal Investigator(s):** Christoph Hornik, MD, PhD, MPH (Duke University), Mina Hanna, MD (site PI), Hubert Ballard, MD and John Bauer, PhD  
**Role in Project:** Co-Investigator  
**Effort:** 0% salary support  
**Institution/University:** University of Kentucky  
**Source of Funding:** Extramural  
**Duration of Project:** 07/2022-8/2024  
**Total Award:** \$  
**Grant Number:** n/a

## Inactive

**Project Title:** Infant Brain Injury and its Consequences Research Alliance  
**Project Number:** n/a  
**Principal Investigator(s):** Brandon Miller, MD, PhD and John Bauer, PhD  
**Role in Project:** Member and mentor  
**Effort:** 0% salary support  
**Institution/University:** University of Kentucky Research Alliance  
**Source of Funding:** Intramural  
**Duration of Project:** 07/2020-7/2022  
**Total Award:** \$100,000/year x 2 years  
**Grant Number:** n/a

**Project Title:** NEOPAIN- Neurologic Outcomes and Pre-emptive Analgesia in Neonates.  
**Project Number:** IRB#95-30071  
**Principal Investigator(s):** KJS Anand, MD, N. Desia, MD  
**Role in Project:** Co-Investigator  
**Effort:** 0 % salary support  
**Institution/University:** University of Kentucky NICU  
**Source of Funding:** NIH RO1  
**Duration of Project:** 4/2/1998-2/9/2004  
**Total Award:**  
**Grant Number:** 1RO1HD-36484-01A1

**Project Title:** Lung Protection with Azithromycin in Preterm Infants and the Role of *Ureaplasma/Mycoplasma* in Bronchopulmonary Dysplasia  
**Project Number:** IRB#04-0436  
**Principal Investigator(s):** H. Ballard, MD, Lori Shook, MD  
**Role in Project:** Principal Investigator  
**Effort:** 0 % salary support  
**Institution/University:** University of Kentucky NICU  
**Source of Funding:** American Lung Association  
**Duration of Project:** 1/2004-6/2010  
**Total Award:** \$35,000 x 1 year  
**Grant Number:** n/a

**Project Title:** Rat Oxygen Toxicity Model of Bronchopulmonary Dysplasia and Protection with Azithromycin.  
**Project Number:** IACUC#741M2004  
**Principal Investigator(s):** H. Ballard, MD, Lori Shook, MD, Bill Everson, PhD  
**Role in Project:** Principal Investigator  
**Effort:** 0 % for salary support  
**Institution/University:** University of Kentucky/Department of Pediatrics  
**Source of Funding:** K30 Career Training in Therapeutics and Translational Research Program  
**Duration of Project:** 1/2005  
**Total Award:** \$5,000 x 1 year  
**Grant Number:** n/a

**Project Title:** Determining the role of caveolin and eNOS in bronchial smooth muscle hyper responsiveness during acute exacerbations of asthma.  
**Project Number:** IACUC#741M2004  
**Principal Investigator(s):** H. Ballard, MD, Bill Everson, PhD  
**Role in Project:** Principal Investigator  
**Effort:** 0 % salary support  
**Institution/University:** University of Kentucky/Department of Pediatrics  
**Source of Funding:** CMN Grant  
**Duration of Project:** 1/2006  
**Total Award:** \$10,000 x 1 year  
**Grant Number:** n/a

**Project Title:** Determining the role of perfluorohexane vapor in preventing hyperoxia mediated lung injury.  
**Project Number:** IACUC#741M2004  
**Principal Investigator(s):** H. Ballard, MD, Bill Everson, PhD  
**Role in Project:** Principal Investigator  
**Effort:** 0 % salary support  
**Institution/University:** University of Kentucky/Department of Pediatrics  
**Source of Funding:** CMN Grant  
**Duration of Project:** 1/2007  
**Total Award:** \$10,000 x 1 year  
**Grant Number:** n/a

**Project Title:** Determining the role of scavenger receptors in ventilator induced lung injury.  
**Project Number:** IACUC#741M2004  
**Principal Investigator(s):** H. Ballard, MD, Bill Everson, PhD  
**Role in Project:** Principal Investigator  
**Effort:** 0 % salary support  
**Institution/University:** University of Kentucky/Department of Pediatrics  
**Source of Funding:** CMN Grant  
**Duration of Project:** 01/2008-12/2009  
**Total Award:** \$10,000 x 2 years  
**Grant Number:** n/a

**Project Title:** Kentucky Asthma and Smoking Cessation Program.  
**Project Number:** n/a  
**Principal Investigator(s):** Don Hayes, MD, H. Ballard, MD  
**Role in Project:** Co-Investigator  
**Effort:** 0 % salary support  
**Institution/University:** University of Kentucky/Department of Pediatrics  
**Source of Funding:** CATCH Implementation Funds Application from the AAP  
**Duration of Project:** 1/2008  
**Total Award:** \$12,000 x 1 year  
**Grant Number:** n/a

## **XIV. RESEARCH & INTELLECTUAL CONTRIBUTIONS - *continued***

### **D. NON-SPONSORED RESEARCH PROJECTS**

#### **Active**

**Project Title:** Predictors of extubation success in ventilated preterm infants.  
**Project Number:** IRB#16-1098-P2H  
**Principal Investigator(s):** Hubert O. Ballard, MD, Nikki Davidson, MD, John Bauer, PhD, M. Douglas Cunningham, MD  
**Role in Project:** Principal investigator and mentor  
**Date Started:** 2/13/2017  
**Date To Be Completed:** Ongoing  
**Institution/University:** University of Kentucky NICU

**Project Title:** Survey of sedation attitudes and practices in neonatal ECMO.  
**Project Number:** IRB#43179  
**Principal Investigator(s):** Hubert O. Ballard, MD, Alison Slone, MD  
**Role in Project:** Principal investigator and mentor  
**Date Started:** 1/26/2018  
**Date To Be Completed:** Ongoing  
**Institution/University:** University of Kentucky NICU

**Project Title:** Oxidative stress in neonates on ECMO.  
**Project Number:** IRB#17-0122-F1V  
**Principal Investigator(s):** Hubert O. Ballard, MD, Alison Slone, MD, John Bauer, PhD  
**Role in Project:** Principal investigator and mentor  
**Date Started:** 3/12/2018  
**Date To Be Completed:** Ongoing  
**Institution/University:** University of Kentucky NICU

**Project Title:** Congenital Diaphragmatic Hernia (CDH) in Low Volume Centers: Investigate the short and long-term outcomes of neonates with CDH treated in a low CDH patient volume tertiary care center.  
**Project Number:** IRB#53397  
**Principal Investigator(s):** Hubert O. Ballard, MD, Pratibha Thakkar, MD, Michael Vieth, Lan Jiang, M3  
**Role in Project:** Principal Investigator and mentor  
**Date Started:** 05/2019  
**Date To Be Completed:** Ongoing  
**Institution/University:** University of Kentucky NICU



**Project Title:** Evaluation of neonates placed on ECMO who have Neonatal Abstinence Syndrome.  
**Project Number:** IRB#52145  
**Principal Investigator(s):** Hubert O. Ballard, MD, Hallie Walther, M1, Phil Bernard, MD, Karen Garlitz, PharmD, John Bauer, PhD  
**Role in Project:** Principal investigator and mentor  
**Date Started:** 7/2019  
**Date To Be Completed:** Ongoing  
**Institution/University:** University of Kentucky NICU

**Project Title:** Comparison of double-lumen catheter products utilized during neonatal ECMO: Avalon® vs. Origen®.  
**Project Number:** IRB#58141  
**Principal Investigator(s):** Hubert O. Ballard, MD, George Chalhoub, M3, John Bauer, PhD  
**Role in Project:** Principal Investigator and mentor  
**Date Started:** 2/2020  
**Date To Be Completed:** Ongoing  
**Institution/University:** University of Kentucky NICU

**Project Title:** NICU outcomes of patent ductus arteriosus: device vs. surgical closure.  
**Project Number:** IRB#59194  
**Principal Investigator(s):** Hubert O. Ballard, MD, Rahul Joseph, MD, Sumit Dang, MD, Parisa A. Shamaei Zadeh, Charles Grigsby, MD.  
**Role in Project:** Principal Investigator and mentor  
**Date Started:** 4/2020  
**Date To Be Completed:** Ongoing  
**Institution/University:** University of Kentucky NICU

**Project Title:** Ventilation strategies and respiratory outcomes in neonates.  
**Project Number:** IRB#59668  
**Principal Investigator(s):** Hubert O. Ballard, MD, Hope VanCleve, MD, Courtney Kantzler, MD, Mina Hanna, MD, Doug Cunningham, MD, John Bauer, PhD  
**Role in Project:** Principal Investigator and mentor  
**Date Started:** 5/2020  
**Date To Be Completed:** Ongoing  
**Institution/University:** University of Kentucky NICU

**Project Title:** Retrospective Review of Neurodevelopmental Effect of Long Term Use of Dexmedetomidine in Neonates.  
**Project Number:** IRB#52412  
**Principal Investigator(s):** Hubert O. Ballard, MD and Nirmala Desai, MD  
**Role in Project:** Principal Investigator and mentor  
**Date Started:** 5/2020  
**Date To Be Completed:** Ongoing  
**Institution/University:** University of Kentucky NICU

**Project Title:** Retrospective review of *Ureaplasma spp* prevalence and outcome in premature infants.  
**Project Number:** IRB#73200  
**Principal Investigator(s):** Hubert O. Ballard, MD, John Bauer, PhD, and Maher Ajour, MD  
**Role in Project:** Principal Investigator and mentor  
**Date Started:** 11/2021  
**Date To Be Completed:** 7/2023  
**Institution/University:** University of Kentucky NICU

**Project Title:** Evaluation of sedation scoring for neonates placed on ECMO: RASS vs. N-PASS.  
**Project Number:** IRB#85740 pending approval  
**Principal Investigator(s):** Hubert O. Ballard, MD, John Bauer, PhD, Charles Grigsby, MD, Nicholas Severyn, DO, and Jeremy Sites, MD  
**Role in Project:** Principal Investigator and mentor  
**Date Started:** Pending  
**Date To Be Completed:** Ongoing  
**Institution/University:** University of Kentucky PICU

**Project Title:** Clinical Parameters for Neonatal ECMO: Invasive vs. Non-invasive Indicators.  
**Project Number:** IRB#86276 pending approval  
**Principal Investigator(s):** Hubert O. Ballard, MD, John Bauer, PhD, Nicholas Severyn, DO, Jeremy Sites, MD and John Slaughter  
**Role in Project:** Principal Investigator and mentor  
**Date Started:** Pending  
**Date To Be Completed:** Ongoing  
**Institution/University:** University of Kentucky NICU and PICU

## **XIV. RESEARCH & INTELLECTUAL CONTRIBUTIONS - *continued***

### **D. NON-SPONSORED RESEARCH PROJECTS – *continued***

#### **Inactive**

**Project Title:** Validity of informed consent obtained in the perinatal period for neonatal research.  
**Project Number:** IRB#01-0646-F3R  
**Principal Investigator(s):** Hubert O. Ballard, MD, Investigator Lori Shook, MD  
**Role in Project:** Principal Investigator  
**Date Started:** 7/2002  
**Date Completed:** 7/2005  
**Institution/University:** University of Kentucky NICU

**Project Title:** Lung protection with azithromycin in preterm infants.  
**Project Number:** IRB#04-0191-P3B  
**Principal Investigator(s):** Hubert O. Ballard, MD, Lori Shook, MD  
**Role in Project:** Principal Investigator  
**Date Started:** 7/2003  
**Date Completed:** 7/2007  
**Institution/University:** University of Kentucky NICU

**Project Title:** Genetic studies of Bronchopulmonary Dysplasia.  
**Project Number:** IRB#03-0797  
**Principal Investigator(s):** Vineet Bhandari, MD, Nirmala Desai, MD  
**Role in Project:** Co-Investigator  
**Date Started:** 4/1/2004  
**Date Completed:** 4/1/2010  
**Institution/University:** University of Kentucky NICU

**Project Title:** Evaluation of association between quorum sensing molecules in stool and health indicators in the neonatal population.  
**Project Number:** IRB#05-0858  
**Principal Investigator(s):** Deb Flomenhoff, MD, Hubert O. Ballard, MD,  
**Role in Project:** Principal investigator and collaborator  
**Date Started:** 10/25/2005  
**Date Completed:** 7/2008  
**Institution/University:** University of Kentucky NICU

**Project Title:** Trial II of lung protection with azithromycin in preterm infants.  
**Project Number:** IRB#04-0436-F1V  
**Principal Investigator(s):** Hubert O. Ballard, MD, Lori Shook, MD  
**Role in Project:** Principal Investigator  
**Date Started:** 7/2006  
**Date Completed:** 5/2012  
**Institution/University:** University of Kentucky NICU

**Project Title:** Acyclovir therapy in febrile infants <1 year of age.  
**Project Number:** IRB#07-0213  
**Principal Investigator(s):** Hubert O. Ballard, MD, J. Thomas Meadows, MD, Lori Shook, MD, Philip Bernard, MD  
**Role in Project:** Co-investigator and mentor  
**Date Started:** 4/3/2007  
**Date Completed:** 5/2012  
**Institution/University:** University of Kentucky, PICU/NICU

**Project Title:** Case series of therapeutic hypothermia on ECMO in neonates.  
**Project Number:** IRB# 43598  
**Principal Investigator(s):** Prasad Bhandary, MD, Hubert O. Ballard, MD  
**Role in Project:** Co-investigator and mentor  
**Date Started:** 5/6/2016  
**Date Completed:** 12/16/2020  
**Institution/University:** University of Kentucky NICU

**Project Title:** A comparison of complication rates with quadrox™ vs. mini-max™ oxygenators in neonatal ECMO patients.  
**Project Number:** IRB#16-0548-P1G  
**Principal Investigator(s):** Hubert O. Ballard, MD, John Daniel, MD  
**Role in Project:** Principal investigator and mentor  
**Date Started:** 8/15/2016  
**Date Completed:** 8/14/2017  
**Institution/University:** University of Kentucky NICU

**Project Title:** Risk mitigation for unplanned extubations in the NICU.  
**Project Number:** IRB#46435  
**Principal Investigator(s):** Hubert O. Ballard, MD, Brian Moore, DO, John Bauer, PhD  
**Role in Project:** Principal investigator and mentor  
**Date Started:** 01/4/2019  
**Date To Be Completed:** 6/2020  
**Institution/University:** University of Kentucky NICU

## **XIV. RESEARCH & INTELLECTUAL CONTRIBUTIONS - *continued***

### **E. OTHER CREATIVE ACTIVITIES**

- |            |  |
|------------|--|
| 06/25/2004 | <b>Food and Drug Administration</b><br>Use of azithromycin in preterm infants/Clinical trial using azithromycin in extremely preterm infants/Prevention of bronchopulmonary dysplasia/<br>Investigational new drug# 70,083 |
| 02/1/2018  | <b>University of Kentucky, Office of Technology Commercialization</b><br>Invention of a new endotracheal tube holder for neonates that require mechanical ventilation. 30% contribution effort.                            |