The Pediatric Cardiac Intensive Care Society

9TH INTERNATIONAL CONFERENCE

December 9-12, 2012
Loews Miami Beach Hotel · Miami Beach, Florida, USA

CONFERENCE PROGRAM

This activity is made possible through educational grant support provided by multiple commercial entities.

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Welcome to the 9th International Conference of the Pediatric Cardiac Intensive Care Society (PCICS). It is a pleasure to have you with us, and we appreciate your participation.

This 4-day multidisciplinary program will provide a comprehensive review of pediatric cardiac intensive care. The symposium will be comprised of more than 120 lectures in various areas of cardiac intensive care and will produce a joint PCICS/ELSO consensus statement on mechanical circulatory support.

The presentation slides will be available for download the day after each presentation on the PCICS Website: www.pcics.org. Slides are available to registered attendees. Use password: PCICS2012

The registration desk will be open to registrants at the following times:

- **Sunday**: 8:00 AM–8:00 PM
- **Monday**: 6:30 AM–6:00 PM
- **Tuesday**: 6:30 AM–6:00 PM
- **Wednesday**: 6:30 AM–5:00 PM

Please join us for the Welcome Reception at 8:00 PM on Sunday following the Opening Session CICU in The 22nd Century. Weather permitting, the reception will be held on the Americana Lawn. Outdoor attire is suggested.

The PCICS Business Meeting will be held on Monday from 11:30 AM–1:00 PM in Salon 3. All registered attendees are welcome.

If you need additional assistance, please contact Ashley Lee at (317) 908-7123 or Jim Shaffer at (317) 437-6577 or visit the registration/hospitality desk.

Thank you for your participation, and we look forward to a successful program!

Sincerely,

Paul A. Checchia, MD, FAAP, FCCM, FACC
Professor of Pediatric Critical Care Medicine
Baylor College of Medicine
Medical Director, Pediatric Cardiovascular Intensive Care Unit
Texas Children’s Hospital
Houston, Texas, USA
VISION & MISSION

WHY PCICS WAS FORMED

PCICS was formed to provide an international professional forum to promote excellence in pediatric cardiac critical care medicine. The founders of the society launched our inaugural membership campaign in 2003. By the end of 2005, we had held our first Symposium, which will be an annual professional development conference, and had grown to 250 members in 12 nations.

We seek participation by healthcare professionals dedicated to acquiring knowledge and improving practice for our critically ill patients with congenital and acquired heart disease.

THE PURPOSE OF PCICS

- Support, encourage and promote excellence in medical care and research in the field of pediatric cardiac critical care medicine
- Encourage collegial relationships among pediatric specialists
- Improve the level of care of pediatric and adult patients with congenital heart disease, pediatric patients with acquired cardiovascular disease and pediatric patients after cardiac surgery
- Promote basic and clinical research related to pediatric patients in the peri-operative period
- Organize international scientific meetings on a permanent basis; facilitate links between complementary international and national professional colleges and societies
- Promote and disseminate related educational material through established and developing communication technologies
CME

PROGRAM OVERVIEW

The purpose of this educational activity is to provide healthcare professionals with insights into the clinical research and management strategies for the treatment of neonates, children, and adults with congenital and acquired heart disease in the intensive care setting.

EDUCATIONAL OBJECTIVES

After completing this activity, the participant should be better able to:

- Evaluate the effects of mechanical ventilation on disease states including how they affect outcomes
- Measure the impact of the PNP practice in the ICU including multicenter collaborative opportunities
- Discuss the detrimental effects of adverse caregiver interactions on patient care
- Discuss the role of extracorporeal membrane oxygenation in the resuscitation of patients who fail to respond to standard measures
- Utilize biomarkers in the identification and management of cardiac failure
- Identify current indications for mechanical circulatory support
- Explain cardiopulmonary interaction in the patient with ventricular failure
- Restate the rationale for public reporting of outcomes for the treatment of congenital heart disease
- Explain how to care for children with complex genetic abnormalities
- Effectively diagnose and treat pediatric patients with newly diagnosed cardiomyopathy
- Discuss the factors in routine ICU care that may adversely impact long-term outcomes in children with congenital heart disease
- Recognize the role of hemodynamic monitoring in the management of critical cardiac disease including the level of evidence supporting the use of these modalities
- Identify potential markers of acute kidney injuries in critical cardiac disease
- Apply the concepts of lung-protective strategies for mechanical ventilation
- Identify the latest data on the management of AV canals in infants
- Explain the impact of the neurohormonal axis on critical cardiac disease
- Discuss the inflammatory responses to cardiopulmonary bypass
- Appraise the role of ventilator support in the critically ill patient with cardiac disease
- Recognize the influence of sedation and analgesia in the treatment of the stress response to open heart surgery
- Discuss various topics associated with cardiac care including brain protection and transfusion
- Describe the role of blood product transfusion following cardiac surgery
- Implement appropriate resuscitation practices in specific populations of patients following cardiac surgery
- Choose correct strategies for crisis management in patients with critical cardiac disease
- Discuss issues related to the care of chronically critically ill patients
- Summarize the analysis of treatment outcomes in patients with congenital heart disease
Select the appropriate statistical tools to analyze treatment outcomes in patients with congenital heart disease

Recognize challenges in measuring the morbidity associated with treatments for patients with congenital heart disease

Discuss strategies for the stratification of operative and procedural complexity in databases of patients with congenital heart disease

Discuss strategies for verification of data in databases of patients with congenital heart disease

Implement strategies for long-term follow-up of patients with congenital heart disease

Summarize the role of commonly used sedative and analgesic agents in contributing to the neurotoxicity of the developing brain

Discuss future monitoring technologies in cardiac care

Describe the role of physicians and nurses in the pediatric critical care transport team

Describe the role of nurses in the pediatric critical care transport team

TARGET AUDIENCE

This activity has been designed to meet the educational needs of cardiologists, critical care physicians, cardiac surgeons, anesthesiologists, pediatric critical care nurses, registered nurses, and advanced practice care nurses involved in the care of neonates, children, and adults with heart disease in the intensive care setting.

ACCREDITATION STATEMENT

This activity has been planned and implemented in accordance with the Essential Areas and policies of the Accreditation Council for Continuing Medical Education through the joint sponsorship of the Postgraduate Institute for Medicine and ACCELMED. The Postgraduate Institute for Medicine is accredited by the ACCME to provide continuing medical education for physicians.

Credit Designation

The Postgraduate Institute for Medicine designates this live activity for a maximum of 24 AMA PRA Category 1 Credit(s)™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

NURSING CONTINUING EDUCATION

After completing this activity, the participant should be able to:

Provide appropriate care and counsel for patients and their families

Credit Designation

This educational activity for 24 contact hours is provided by the Postgraduate Institute for Medicine.

Accreditation Statements

The Postgraduate Institute for Medicine is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center’s Commission on Accreditation.

STATEMENT OF CREDIT

A statement of credit will be issued only upon receipt of a completed activity evaluation form and will be mailed to you within three weeks.
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<tr>
<th>Name</th>
<th>Position</th>
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<tr>
<td>Duncan Macrae, MB</td>
<td>President</td>
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<tr>
<td><strong>Paul A. Checchia, MD, FAAP, FCCM, FACC</strong></td>
<td>VICE-PRESIDENT (USA)</td>
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<tr>
<td>Professor of Pediatric Critical Care Medicine</td>
<td>Baylor College of Medicine</td>
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<tr>
<td>Medical Director, Pediatric Cardiovascular Intensive Care Unit</td>
<td>Texas Children’s Hospital</td>
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<tr>
<td>Houston, Texas, USA</td>
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<tr>
<td>Dr. Checchia serves as Medical Director of the Pediatric Cardiovascular Intensive Care Unit at Texas Children’s Hospital in Houston. Additionally, he is Professor of Pediatric Critical Care Medicine at Baylor College of Medicine. Before coming to Houston in 2011, Dr. Checchia served as Chief of the Pediatric Cardiac Critical Care Service as well as Medical Co-director of the Pediatric Intensive Care Unit at St. Louis Children’s Hospital. He is also spent 3 years as Associate Professor of Pediatric Critical Care Medicine and Cardiology at Washington University School of Medicine where he received the 2011 Outstanding Teacher Award for the Department of Pediatrics. He specializes in critical care of children with heart disease. His research focuses on understanding the complex pathophysiology of cardiac disease and related injuries in children, with the goal of developing useful diagnostic tools, protective strategies, and mechanism-driven cardiac therapies.</td>
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<td><strong>Prof. Dr. med Brigitte Stiller</strong></td>
<td>VICE-PRESIDENT (EUROPE)</td>
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<tr>
<td>Full Professor of Congenital Heart Disease</td>
<td>Clinic of Congenital Heart Disease/Pediatric Cardiology</td>
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<tr>
<td>Freiburg im Breisgau, Baden-Württemberg, Germany</td>
<td>University of Freiburg</td>
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<tr>
<td>Prof. Dr. med Brigitte Stiller earned her Dr. med at the University of Cologne, completed training in general pediatrics at Universität zu Köln, and completed training and consulting in pediatric cardiology at the German Heart Institute Berlin. She is currently Director of the Clinic for Congenital Heart Disease and Pediatric Cardiology at the University Hospital, Freiburg and Professor of Pediatrics and Pediatric Cardiology at the University of Freiburg.</td>
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<tr>
<td><strong>Graeme MacLaren, MBBS, FCCM</strong></td>
<td>VICE-PRESIDENT (ASIA-PACIFIC)</td>
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<tr>
<td>Director of Cardiothoracic Intensive Care</td>
<td>National University Hospital</td>
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<td>Queenstown, Singapore</td>
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<td>Graeme MacLaren is an adult and paediatric intensivist who works in both Singapore and Australia. He is Director of Cardiothoracic Intensive Care at the National University Hospital of Singapore, Associate Professor at the National University of Singapore, and a visiting intensivist at the Royal Children’s Hospital, Melbourne, Australia. His interests include extracorporeal life support, perioperative echocardiography, nosocomial sepsis and cardiac intensive care in all ages. He is a member of the Steering Committee of the Extracorporeal Life Support Organization (ELSO) and Vice President (Asia-Pacific) of the Pediatric Cardiac Intensive Care Society.</td>
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<td><strong>Therese Giglia, MD, FAACC, FAAP</strong></td>
<td>VICE-PRESIDENT (MEMBERSHIP)</td>
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<td><strong>David Wessel, MD</strong></td>
<td>VICE-PRESIDENT (DEVELOPMENT)</td>
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<tr>
<td>Senior Vice President, Center for Hospital-Based Specialties</td>
<td>The Ikaria Distinguished Professor of Critical Care Medicine</td>
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<tr>
<td>Children’s National Medical Center</td>
<td>Washington, District of Columbia, USA</td>
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<td>Dr. Wessel was educated and trained in medicine at Oxford, Yale, and Harvard and joined Children’s National Medical Center in 2007. Prior to this appointment, he was Professor of Pediatrics (Anesthesia) at Harvard Medical School and Senior Associate in Cardiology and Anesthesia at Children’s Hospital Boston. Dr. Wessel is internationally known for his pioneering work in caring for infants with heart disease. He was chief of the Cardiac Intensive Care Unit at Boston Children’s for many years and previously served as president of the Pediatric Cardiac Intensive Care Society. He is also a member of the National Institutes of Health DSMB for the National Institute of Allergy and Infectious Diseases’ multicenter trial networks for solid organ transplantation.</td>
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Anthony C. Chang, MD, MBA, MPH  
**VICE-PRESIDENT (INTERNATIONAL AFFAIRS)**

Medical Director, Heart Program  
Children's Hospital of Orange County (CHOC)  
Orange, California, USA  

Dr. Anthony C. Chang is the Medical Director the Heart Program at CHOC. He completed his undergraduate education at Johns Hopkins University with a degree in molecular biology and his medical school education at Georgetown University School of Medicine. He is the chief editor of *Pediatric Cardiac Intensive Care* and the past president-elect of PCICS. He is an associate editor of *Pediatric Critical Care Medicine* and is on the editorial board of *Cardiology in the Young*. His present research interest includes application of artificial intelligence in medicine. Dr. Chang is in the Masters program in Biomedical Informatics at Stanford University School of Medicine. He has been named one of America’s top doctors by *Best Doctors* and one of the top cardiologists by the Consumer Research Council.

Nancy Ghanayem, MD  
**SECRETARY**

Timothy Hoffman, MD, FACC, FAHA  
**TREASURER**

Associate Medical Director of Cardiology  
Medical Director, Heart Transplant and Heart Failure Program  
Nationwide Children’s Hospital  
Heart Center Associate  
Professor of Pediatrics  
The Ohio State University College of Medicine  
Columbus, Ohio, USA  

Dr. Timothy M. Hoffman is on the Board of Directors for PCICS and has been serving as Treasurer since 2007. He also serves as the Pediatric Liaison to the AHA Heart Transplant and Heart Failure Committee. He is on the Board of Trustees for the American College of Cardiology – Ohio Division. Dr. Hoffman is involved in several multicenter research collaborations focusing on support of the failing myocardium and pediatric heart transplant care.

David S. Cooper, MD, MPH  
**ASSOCIATE TREASURER**

Director, Cardiac Extracorporeal Life Support Program  
Associate Director, Cardiovascular Intensive Care Unit  
Cincinnati Children’s Hospital Medical Center  
Assistant Professor, University of Cincinnati Department of Pediatrics  
Cincinnati, Ohio, USA  

Dr. Cooper’s clinical interests and areas of research relate to many aspects of cardiac intensive care, including fluid overload and acute kidney injury in critical illness; near infrared spectroscopy in the CVICU; early extubation after neonatal and infant congenital heart surgery; impact of gestational age on outcomes; anticoagulation on extracorporeal life support; and analysis of morbidity/mortality in patients with congenital heart disease.

Desmond Bohn  
**IMMEDIATE PAST PRESIDENT**
Andrew M. Atz, MD

Paul A. Checchia, MD, FAAP, FCCM, FACC
Professor of Pediatric Critical Care Medicine
Baylor College of Medicine
Medical Director, Pediatric Cardiovascular Intensive Care Unit
Texas Children’s Hospital
Houston, Texas, USA

Dr. Checchia serves as Medical Director of the Pediatric Cardiovascular Intensive Care Unit at Texas Children’s Hospital in Houston. Additionally, he is Professor of Pediatric Critical Care Medicine at Baylor College of Medicine. Before coming to Houston in 2011, Dr. Checchia served as Chief of the Pediatric Cardiac Critical Care Service as well as Medical Co-director of the Pediatric Intensive Care Unit at St. Louis Children’s Hospital. He is also spent 3 years as Associate Professor of Pediatric Critical Care Medicine and Cardiology at Washington University School of Medicine where he received the 2011 Outstanding Teacher Award for the Department of Pediatrics. He specializes in critical care of children with heart disease. His research focuses on understanding the complex pathophysiology of cardiac disease and related injuries in children, with the goal of developing useful diagnostic tools, protective strategies, and mechanism-driven cardiac therapies.

David S. Cooper, MD, MPH
Director, Cardiac Extracorporeal Life Support Program
Associate Director, Cardiovascular Intensive Care Unit
Cincinnati Children’s Hospital Medical Center
Assistant Professor, University of Cincinnati Department of Pediatrics
Cincinnati, Ohio, USA

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John M. Costello, MD, MPH
Director, Inpatient Cardiology
Medical Director, Regenstein Cardiac Care Unit
Ann & Robert H. Lurie Children’s Hospital of Chicago
Associate Professor of Pediatrics
Northwestern University Feinberg School of Medicine
Chicago, Illinois, USA

Dr. Costello is the Director of Inpatient Cardiology and the Medical Director of the Regenstein Cardiac Care Unit at the Ann & Robert H. Lurie Children’s Hospital of Chicago. He is an Associate Professor of Pediatrics at Northwestern University Feinberg School of Medicine. He was recently elected to serve on the PCICS Board of Directors. He is cardiac intensivist and an active clinical researcher. His work has included the investigation of hormonal therapies in children undergoing cardiac surgery, the epidemiology and prevention of healthcare associated infections in critically ill children, and outcomes in neonates with critical congenital heart disease.

Nancy Ghanayem, MD

Therese Giglia, MD, FACC, FAAP
Timothy M. Hoffman, MD, FACC, FAHA
Associate Medical Director of Cardiology
Medical Director, Heart Transplant and Heart Failure Program
Nationwide Children's Hospital
Heart Center Associate
Professor of Pediatrics
The Ohio State University College of Medicine
Columbus, Ohio, USA

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Peter C. Laussen, MBBS, FCICM
Chief of Critical Care Medicine
Hospital for Sick Children (SickKids)
Professor of Anaesthesia
University of Toronto
Toronto, Ontario, Canada

Peter Laussen graduated from Melbourne University Medical School and subsequently completed fellowships in anesthesia and pediatric critical care medicine at the Austin Hospital and Royal Children's Hospital, Melbourne. In 2002 was appointed Chief of the Division of Cardiac Intensive Care at Children’s Hospital. In 2002, he became the first incumbent of the Dolly D. Hansen Chair in Pediatric Anesthesia at Children’s Hospital, and in 2008 a Professor of Anesthesia at Harvard Medical School. He is a founding member of http://www.risky-business.com/ and has co-organized a number of national and international conferences directed at addressing human and system factors using lessons learned from high-risk industries in an effort to improve the safety and quality of healthcare. In September 2012, he was appointed as Chief of Critical Care Medicine at the Hospital for Sick Children in Toronto and as Professor in Anaesthesia at the University of Toronto.

Duncan Macrae, MB

Bradley S. Marino, MD, MPP, MSCE
Attending Cardiac Intensivist, Cardiac Intensive Care Unit
Director, Heart Institute Research Core
Director, Heart Institute Neurodevelopmental Clinic
Associate Professor, University of Cincinnati Department of Pediatrics
Cincinnati, Ohio, USA

Bradley S. Marino, MD, MPP, MSCE, is an Associate Professor of Pediatrics at the University of Cincinnati’s College of Medicine and an attending cardiac intensivist in Cincinnati Children’s Hospital Medical Center’s CICU. Dr. Marino also serves as the Director of the Heart Institute Research Core and the Heart Institute Neurodevelopmental Clinic. His research interests are on the impact of neurodevelopmental, psychosocial, and physical morbidities on quality of life, functional status, and behavioral and emotional functioning in the high-risk complex congenital heart disease population. Dr. Marino earned his medical degree from Harvard Medical School. He completed his pediatric residency at Johns Hopkins Hospital and a combined fellowship in cardiology and critical care medicine at The Children’s Hospital of Philadelphia.

Stephen J. Roth, MD, MPH
Chief of Pediatric Cardiology
Director, Children’s Heart Center
Lucile Packard Children’s Hospital at Stanford
Professor of Pediatrics and Chief of the Division of Pediatric Cardiology
Stanford University School of Medicine
Palo Alto, California, USA

Dr. Stephen Roth is a pediatric cardiologist who subspecializes in pediatric cardiac intensive care. At Lucile Packard Children’s Hospital, he serves as the Director of the Children’s Heart Center and Medical Director of the 20-bed CICU. At Stanford University School of Medicine, he is Professor of Pediatrics (Cardiology) and Chief of the Division of Pediatric Cardiology. He obtained his MPH from the Harvard School of Public Health and his MD from Yale Medical School. His current research focuses on reducing the morbidity related to cardiovascular surgery in neonates, infants, and young children in the intensive care setting.
Steven Schwartz, MD, MS, FRCPC
Head, Division of Cardiac Critical Care Medicine
The Hospital for Sick Children (SickKids)
Toronto, Ontario, Canada

Dr. Schwartz is a cardiac intensivist and head of the Division of Cardiac Critical Care Medicine at the Hospital for Sick Children in Toronto. Dr. Schwartz has authored and co-authored numerous papers and book chapters on clinical care and underlying mechanisms of cardiac dysfunction in critically ill infants and children with congenital heart disease. He has published several papers on the effects of cardiopulmonary bypass on neonatal cardiac function and prevention of myocardial ischemia-reperfusion injury with corticosteroids. Metabolic alterations associated with pediatric cardiac surgery, especially those regarding glucose metabolism and insulin sensitivity, are currently a particular research focus for Dr. Schwartz. He is also a member of the PCICS board of directors.

Lara Shekerdemian, MD, MB, BCh, FAAP, FCICM, FRCPC

Sarah Tabbutt, MD, PhD

Ravi R. Thiagarajan, MBBS, MPH
Cardiac Intensivist
Assistant Professor of Pediatrics
Boston Children’s Hospital
Boston, Massachusetts, USA

Dr. Ravi Thiagarajan is a cardiac intensivist working in the CICU at Boston Children’s Hospital. His area of research is in mechanical circulatory support. He co-directs the cardiac ECMO program at Boston Children’s Hospital, and nationally, he co-chairs the ECMO registry of the Extracorporeal Life Support Organization.

Gil Wernovsky, MD, FACC, FAAP
Associate Chief, Division of Pediatric Cardiology
Director, Program Development, The Cardiac Center
Medical Director, NeuroCardiac Care Program
The Children’s Hospital of Philadelphia (CHOP)
Professor of Pediatrics, Perelman School of Medicine
University of Pennsylvania
Philadelphia, Pennsylvania, USA

Dr. Wernovsky has been practicing pediatric cardiac intensive care and outpatient cardiology at Children’s Hospital (Boston) and CHOP where he was the director of the CICU. His career goal is to identify modifiable factors in the perioperative care of infants that will improve life-long success. Dr. Wernovsky was a study physician in the Boston Circulatory Arrest Trial, PI of the PRIMACORP trial, has served on numerous data safety monitoring boards for clinical trials in pediatrics and was the co-chair of the Perioperative Working Group for the NHLBI’s Pediatric Heart Network. He has been an invited member of advisory boards of parent- and patient-support groups including The Congenital Heart Information Network and The Children’s Heart Foundation.
**Program Committee**

**Paul A. Checchia, MD, FAAP, FCCM, FACC**

Program Director
Professor of Pediatric Critical Care Medicine
Baylor College of Medicine
Medical Director, Pediatric Cardiovascular Intensive Care Unit
Texas Children's Hospital
Houston, Texas, USA

Dr. Checchia serves as Medical Director of the Pediatric Cardiovascular Intensive Care Unit at Texas Children's Hospital in Houston. Additionally, he is Professor of Pediatric Critical Care Medicine at Baylor College of Medicine. Before coming to Houston in 2011, Dr. Checchia served as Chief of the Pediatric Cardiac Critical Care Service as well as Medical Co-director of the Pediatric Intensive Care Unit at St. Louis Children's Hospital. He is also spent 3 years as Associate Professor of Pediatric Critical Care Medicine and Cardiology at Washington University School of Medicine where he received the 2011 Outstanding Teacher Award for the Department of Pediatrics. He specializes in critical care of children with heart disease. His research focuses on understanding the complex pathophysiology of cardiac disease and related injuries in children, with the goal of developing useful diagnostic tools, protective strategies, and mechanism-driven cardiac therapies.

**Ronald A. Bronicki, MD**

Program Co-Director
Associate Medical Director, Cardiac Intensive Care
Texas Children's Hospital
Baylor College of Medicine
Houston, Texas, USA

Dr. Bronicki's clinical interests include hemodynamic monitoring, cardiopulmonary interaction, and the inflammatory response to cardiopulmonary bypass. His active areas of research include studying the effects of respiration on cardiovascular function in patients with congenital heart disease, the role of cardiac resynchronization therapy following cardiac surgery, and immunomodulatory strategies for treating the inflammatory response to bypass. Dr. Bronicki served on the program committee for the 2008 and 2012 PCICS meetings and was the co-chair of the 2010 conference.

**David S. Cooper, MD, MPH**

Program Co-Director
Director, Cardiac Extracorporeal Life Support Program
Associate Director, Cardiovascular Intensive Care Unit
Cincinnati Children's Hospital Medical Center
Assistant Professor, University of Cincinnati Department of Pediatrics
Cincinnati, Ohio, USA

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**Dorothy M. Beke, RN, MSN, CPNP-PA/AC**

Clinical Nurse Specialist, CICU
Nurse Practitioner, Cardiology
Bereavement Coordinator, Cardiovascular Program
Children's Hospital Boston
Boston, Massachusetts, USA

Dorothy M. Beke, RN, MSN, CPNP-PA/AC, is a clinical nurse specialist in the CICU, a nurse practitioner in cardiology, and the bereavement coordinator for the cardiovascular program at Children's Hospital Boston. She earned her undergraduate degree from Boston College and MS degree from Bouvé College of Health Sciences at Northeastern University's Graduate School of Nursing. She is a certified pediatric acute and primary care nurse practitioner. Dorothy is the clinical resource for the Mechanical Circulatory Support program in the Cardiovascular Program at Children's Hospital Boston. She has lectured both nationally and internationally on issues related to pediatric cardiac critical care including management of complex congenital heart disease, mechanical circulatory support, and bereavement.

**John M. Costello, MD, MPH**

Director, Inpatient Cardiology
Medical Director, Regenstein Cardiac Care Unit
Ann & Robert H. Lurie Children's Hospital of Chicago
Associate Professor of Pediatrics
Northwestern University Feinberg School of Medicine
Chicago, Illinois, USA

Dr. Costello is the Director of Inpatient Cardiology and the Medical Director of the Regenstein Cardiac Care Unit at the Ann & Robert H. Lurie Children's Hospital of Chicago. He is an Associate Professor of Pediatrics at Northwestern University Feinberg School of Medicine. He was recently elected to serve on the PCICS Board of Directors. He is cardiac intensivist and an active clinical researcher. His work has included the investigation of hormonal therapies in children undergoing cardiac surgery, the epidemiology and prevention of healthcare associated infections in critically ill children, and outcomes in neonates with critical congenital heart disease.
Ali Dodge-Khatami, MD, PhD
Chief of Pediatric Cardiac Surgery
Head, Congenital Heart Program
University Heart Center (UHZ) Hamburg-Eppendorf
Hamburg, Germany

Ali Dodge-Khatami, MD, PhD, is Chief of Pediatric Cardiac Surgery and Head of the Congenital Heart Program at the University Heart Center in Hamburg, Germany. Dr. Dodge-Khatami earned his medical degree at the University of Geneva Medical School in Switzerland, completed his residency in cardiovascular surgery at CHUV in Lausanne, Switzerland, and completed fellowships in congenital cardiothoracic surgery at Children’s Memorial Hospital in Chicago and at Great Ormond Street Hospital for Sick Children in London. His research interests include single ventricle physiology, valve and conduit surgery, and humanitarian congenital cardiac surgery development.

Peter J. Gruber, MD, PhD
Associate Professor
Chief of Pediatric Cardiothoracic Surgery
Primary Children’s Medical Center
Salt Lake City, Utah, USA

Dr. Gruber completed his undergraduate and medical training at the University of Pennsylvania with a degree in biochemistry and biophysics and followed by an MD, PhD in the MSTP program with postgraduate training at Johns Hopkins Hospital and the Children’s Hospital of Philadelphia. He is currently the D. Rees and Eleanor T. Jensen Presidential Chair and Chief of Pediatric Cardiothoracic Surgery at Primary Children’s Medical Center. Scientifically, he is best known for his work in human congenital heart disease particularly investigations in the molecular basis of defects of cardiac morphogenesis and their relationship to cardiac progenitor cells. His clinical interests revolve around all aspects of complex congenital cardiac repairs and transplantation. Dr. Gruber is a member of AOA and the American Society for Clinical Investigation.

Darren Klugman, MD
Attending Physician
Cardiac Intensive Care Unit
Director of Medical Safety
Children’s National Medical Center
Washington, District of Columbia, USA

Trained in critical care and cardiology, Dr. Klugman is an attending in the Cardiac Intensive Care Unit and is the Director of Medical Safety at Children’s National Medical Center. Areas of clinical interest include heart failure and management of single ventricle patients. Dr. Klugman’s research interests include myocarditis and heart failure in the single ventricle patient following palliation. He lives in Chevy Chase, Maryland with his wife and 3 children.

Graeme MacLaren, MBBS, FCCM
Director of Cardiothoracic Intensive Care
National University Hospital
Queenstown, Singapore

Graeme MacLaren is an adult and paediatric intensivist who works in both Singapore and Australia. He is Director of Cardiothoracic Intensive Care at the National University Hospital of Singapore, Associate Professor at the National University of Singapore, and a visiting intensivist at the Royal Children’s Hospital, Melbourne, Australia. His interests include extracorporeal life support, perioperative echocardiography, nosocomial sepsis and cardiac intensive care in all ages. He is a member of the Steering Committee of the Extracorporeal Life Support Organization (ELSO) and Vice President (Asia-Pacific) of the Pediatric Cardiac Intensive Care Society.

Bradley S. Marino, MD, MPP, MSCE
Attending Cardiac Intensivist, Cardiac Intensive Care Unit
Director, Heart Institute Research Core
Director, Heart Institute Neurodevelopmental Clinic
Associate Professor, University of Cincinnati Department of Pediatrics
Cincinnati, Ohio, USA

Bradley S. Marino, MD, MPP, MSCE, is an Associate Professor of Pediatrics at the University of Cincinnati’s College of Medicine and an attending cardiac intensivist in Cincinnati Children’s Hospital Medical Center’s CICU. Dr. Marino also serves as the Director of the Heart Institute Research Core and the Heart Institute Neurodevelopmental Clinic. His research interests are on the impact of neurodevelopmental, psychosocial, and physical morbidities on quality of life, functional status, and behavioral and emotional functioning in the high-risk complex congenital heart disease population. Dr. Marino earned his medical degree from Harvard Medical School. He completed his pediatric residency at Johns Hopkins Hospital and a combined fellowship in cardiology and critical care medicine at The Children’s Hospital of Philadelphia.

David Nichols, MD
Joshua Salvin, MD, MPH

Steven Schwartz, MD, MS, FRCPC
Head, Division of Cardiac Critical Care Medicine
The Hospital for Sick Children
Toronto, Ontario, Canada

Dr. Schwartz is a cardiac intensivist and head of the Division of Cardiac Critical Care Medicine at the Hospital for Sick Children in Toronto. Dr. Schwartz has authored and co-authored numerous papers and book chapters on clinical care and underlying mechanisms of cardiac dysfunction in critically ill infants and children with congenital heart disease. He has published several papers on the effects of cardiopulmonary bypass on neonatal cardiac function and prevention of myocardial ischemia-reperfusion injury with corticosteroids. Metabolic alterations associated with pediatric cardiac surgery, especially those regarding glucose metabolism and insulin sensitivity, are currently a particular research focus for Dr. Schwartz. He is also a member of the PCICS board of directors.

Sandy Staveski, RN, MS, CPNP-AC, CNS
Nurse Practitioner
Cardiovascular Intensive Care Unit
Lucile Packard Children’s Hospital at Stanford
Palo Alto, California, USA

Sandy Staveski, RN, MS, CPNP-AC, CNS, is a nurse practitioner in Lucile Packard Children’s Hospital Cardiovascular ICU. Her current appointment is divided between managing critically ill pediatric cardiac patients and performing nursing research. Additionally, Sandy is faculty at University of California at San Francisco School of Nursing in the Family Health Care Department. Her research focus is on developing nursing capacity and optimizing patient outcomes in the developed and developing world.
### FACULTY

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<th>Name</th>
<th>Title</th>
<th>Institution</th>
<th>Experience and Contributions</th>
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<tr>
<td><strong>Dominic Abrams, MBBS, MD, MRCP</strong>&lt;br&gt;Assistant Professor of Pediatrics&lt;br&gt;Children's Hospital Boston&lt;br&gt;Boston, Massachusetts, USA</td>
<td>Dr. Abrams qualified from St Mary's Hospital Medical School/Imperial College, London. Trained in adult and pediatric cardiology and trained at academic centers in London including St. Bartholomew's Hospital, The Heart Hospital/University College London and The Royal Brompton Hospital. In 2007, he was appointed as a staff cardiologist/electrophysiologist at St. Bartholomew's Hospital. He has numerous active research programs in the fields of inherited cardiovascular disease and arrhythmia in adult congenital heart disease. On staff at Boston Children's Hospital since 2011 he runs regular electrophysiology and pacing for intensive care sessions for both nursing and medical staff, and he organized the electrophysiology sessions at the 2008 and 2011 PCICS annual meetings. He has lectured both nationally and internationally on numerous aspects of cardiac arrhythmia.</td>
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<td><strong>Gail M. Annich, MD, MS, FRCP, FAAP</strong>&lt;br&gt;Associate Professor&lt;br&gt;Department of Pediatrics&lt;br&gt;Division of Pediatric Critical Care Medicine&lt;br&gt;University of Michigan Medical Center&lt;br&gt;Ann Arbor, Michigan, USA</td>
<td>Dr. Annich is Associate Professor in the Department of Pediatrics, Division of Pediatric Critical Care Medicine, at the University of Michigan Medical Center. She earned her MD at the University of Alberta in Edmonton, Alberta, Canada and her MS in clinical research design and statistical analysis at the University of Michigan, School of Public Health. She is the Medical Director of Pediatric ECMO and the Pediatric Intensive Care Unit. Dr. Annich’s clinical interests include extracorporeal life support (ECMO), extracorporeal circulatory devices, coagulation/anticoagulation, drug pharmacokinetics on extracorporeal life support, respiratory failure, and lung diseases. She is a member of the editorial board for Perfusion and an ad hoc reviewer for several journals including Respiratory Care and Critical Care Medicine.</td>
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<td><strong>David M. Axelrod, MD</strong>&lt;br&gt;Clinical Assistant Professor&lt;br&gt;Pediatric Cardiology&lt;br&gt;Stanford School of Medicine&lt;br&gt;Cardiac Intensivist&lt;br&gt;Lucile Packard Children’s Hospital at Stanford&lt;br&gt;Palo Alto, California, USA</td>
<td>David Axelrod, MD, is a cardiac intensivist at Lucile Packard Children's Hospital at Stanford. He completed fellowships in pediatric cardiology and pediatric critical care at Lucile Packard Children's Hospital at Stanford.</td>
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<td><strong>Richard S. Bakalar, MD</strong>&lt;br&gt;Managing Director&lt;br&gt;Advisory Healthcare Services&lt;br&gt;Denver, Colorado, USA</td>
<td>Richard Bakalar, MD is the first US physician specialist in KPMG’s Global Healthcare Center of Excellence, composed of leading subject matter experts from around the world. In this role, he applies his 20 years of clinical experience and 9 years of health information technology experience developing services that improve clinical quality, operational performance, and regulatory compliance. Dr. Bakalar is board certified in internal medicine and nuclear medicine and has a prior faculty appointment in radiology at USUHS—SOM, Bethesda, Maryland. Prior to joining KPMG, he was a Microsoft Physician Executive, responsible for provider communications and clinical use case development on its Amalga and HealthVault healthcare intelligence platforms. Dr. Bakalar was the former Chief Medical Officer on IBM’s America’s Healthcare Solutions team.</td>
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<td><strong>Scott Baldwin, MD</strong></td>
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<td><strong>Robert H. Bartlett, MD</strong>&lt;br&gt;Professor of Surgery, Emeritus&lt;br&gt;University of Michigan Health Systems&lt;br&gt;ECMO Laboratory&lt;br&gt;Ann Arbor, Michigan, USA</td>
<td>Dr. Robert Bartlett developed extracorporeal life support (ECLS) from the laboratory through the first successful clinical trials to routine practice worldwide. ECLS has led to new understanding of the pathophysiology of renal, cardiac, and pulmonary failure which provides the basis for much of modern critical care. Dr. Bartlett continues laboratory and clinical research at the University of Michigan where he is Professor of Surgery, Emeritus.</td>
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<td><strong>Dorothy M. Beke, RN, MSN, CPNP-PA/AC</strong>&lt;br&gt;Clinical Nurse Specialist, CICU&lt;br&gt;Nurse Practitioner, Cardiology&lt;br&gt;Bereavement Coordinator,&lt;br&gt;Cardiovascular Program&lt;br&gt;Children’s Hospital Boston&lt;br&gt;Boston, Massachusetts, USA</td>
<td>Dorothy M. Beke, RN, MSN, CPNP-PA/AC, is a clinical nurse specialist in the CICU, a nurse practitioner in cardiology, and the bereavement coordinator for the cardiovascular program at Children’s Hospital Boston. She earned her undergraduate degree from Boston College and MS degree from Bouvé College of Health Sciences at Northeastern University’s Graduate School of Nursing. She is a certified pediatric acute and primary care nurse practitioner. Dorothy is the clinical resource for the Mechanical Circulatory Support program in the Cardiovascular Program at Children’s Hospital Boston. She has lectured both nationally and internationally on issues related to pediatric cardiac critical care including management of complex congenital heart disease, mechanical circulatory support, and bereavement.</td>
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<td><strong>Kenneth M. Brady, MD</strong>&lt;br&gt;Clinical Nurse Specialist&lt;br&gt;Cardiovascular Intensive Care Unit&lt;br&gt;Children’s Hospital Boston&lt;br&gt;Boston, Massachusetts, USA</td>
<td>Nancy Braudis, RN, MS, CPNP, is a Clinical Nurse Specialist in the CICU at Children’s Hospital Boston. She has a passion for teaching and mentoring nurses in the CICU and beyond. She earned her advanced degree from Boston College and developed an interest in working with complex families. Nancy led a multidisciplinary team in the development of “Family Stress Guidelines” aimed at creating a patient care environment that is conducive to providing pediatric healthcare of the highest quality by promoting and enhancing the clinician team’s relationship with the parents/primary caregivers.</td>
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<tr>
<td><strong>Nancy J. Braudis, RN, MS, CPNP</strong>&lt;br&gt;Clinical Nurse Specialist&lt;br&gt;Cardiovascular Intensive Care Unit&lt;br&gt;Children's Hospital Boston&lt;br&gt;Boston, Massachusetts, USA</td>
<td>Nancy Braudis, RN, MS, CPNP, is a Clinical Nurse Specialist in the CICU at Children’s Hospital Boston. She has a passion for teaching and mentoring nurses in the CICU and beyond. She earned her advanced degree from Boston College and developed an interest in working with complex families. Nancy led a multidisciplinary team in the development of “Family Stress Guidelines” aimed at creating a patient care environment that is conducive to providing pediatric healthcare of the highest quality by promoting and enhancing the clinician team’s relationship with the parents/primary caregivers.</td>
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<td>Name</td>
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<td>Ronald A. Bronicki, MD</td>
<td>Associate Medical Director, Cardiac Intensive Care Texas Children's Hospital Baylor College of Medicine Houston, Texas, USA</td>
<td>Dr. Bronicki’s clinical interests include hemodynamic monitoring, cardiopulmonary interaction, and the inflammatory response to cardiopulmonary bypass. His active areas of research include studying the effects of respiration on cardiovascular function in patients with congenital heart disease, the role of cardiac resynchronization therapy following cardiac surgery, and immunomodulatory strategies for treating the inflammatory response to bypass. Dr. Bronicki served on the program committee for the 2008 and 2012 PCiCS meetings and was the co-chair of the 2010 conference.</td>
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<tr>
<td>Louise Callow, RN, MSN, CPNP</td>
<td>Pediatric Cardiac Surgery University of Michigan Mott Children's Hospital Ann Arbor, Michigan, USA</td>
<td>Louise Callow, RN, MSN, CPNP, graduated from the University of Michigan with a BSN and from Wayne State University with her MSN. She has spent the majority of her 34-year career at the University of Michigan Mott Children’s Hospital as a Pediatric Cardiac Surgery CPNP with a few years as a CPNP in Pediatric Cardiology and several years as Nurse Manager of the Pediatric Cardiothoracic ICU. Throughout this time, she has been collaboratively involved in the development of the Michigan Congenital Heart Center at the University of Michigan, spoken at multiple national and international conferences, published in the area of pediatric cardiac surgery, and presented research abstracts in these areas of interest.</td>
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<td>Frank Cetta, MD, FACC, FASE</td>
<td>Professor of Pediatrics and Medicine Chair, Pediatric Cardiology Division Consultant, Division of Cardiovascular Diseases and Pediatric Cardiology Mayo Clinic Rochester, Minnesota, USA</td>
<td>Dr. Cetta is a pediatric cardiologist with training in internal medicine and pediatrics. He also is a member of the Adult Congenital Heart Disease Clinic at Mayo Clinic. He currently is the Chair of the Division of Pediatric Cardiology at Mayo Clinic Rochester. He completed a residency in internal medicine/pediatrics at Loyola University Medical Center in Maywood, Illinois. His cardiology training was at the Mayo Clinic, Rochester. He specializes in the care of children and adults with congenital heart disease including echocardiographic imaging and diagnostic and interventional cardiac catheterization.</td>
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<tr>
<td>Anthony C. Chang, MD, MBA, MPH</td>
<td>Medical Director, Heart Program Children’s Hospital of Orange County (CHOC) Orange, California, USA</td>
<td>Dr. Anthony C. Chang is the Medical Director the Heart Program at CHOC. He completed his undergraduate education at Johns Hopkins University with a degree in molecular biology and his medical school education at Georgetown University School of Medicine. He is the chief editor of Pediatric Cardiac Intensive Care and the past president-elect of PCiCS. He is an associate editor of Pediatric Critical Care Medicine and is on the editorial board of Cardiology in the Young. His present research interest includes application of artificial intelligence in medicine. Dr. Chang is in the Masters program in Biomedical Informatics at Stanford University School of Medicine. He has been named one of America’s top doctors by Best Doctors and one of the top cardiologists by the Consumer Research Council.</td>
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<tr>
<td>Paul A. Checchia, MD, FAAP, FCCM, FACC</td>
<td>Professor of Pediatric Critical Care Medicine Baylor College of Medicine Medical Director, Pediatric Cardiovascular Intensive Care Unit Texas Children’s Hospital Houston, Texas, USA</td>
<td>Dr. Checchia serves as Medical Director of the Pediatric Cardiovascular Intensive Care Unit at Texas Children’s Hospital in Houston. Additionally, he is Professor of Pediatric Critical Care Medicine at Baylor College of Medicine. Before coming to Houston in 2011, Dr. Checchia served as Chief of the Pediatric Cardiac Critical Care Service as well as Medical Co-director of the Pediatric Intensive Care Unit at St. Louis Children’s Hospital. He is also spent 3 years as Associate Professor of Pediatric Critical Care Medicine and Cardiology at Washington University School of Medicine where he received the 2011 Outstanding Teacher Award for the Department of Pediatrics. He specializes in critical care of children with heart disease. His research focuses on understanding the complex pathophysiology of cardiac disease and related injuries in children, with the goal of developing useful diagnostic tools, protective strategies, and mechanism-driven cardiac therapies.</td>
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<td>Clifford Chin, MD</td>
<td>Medical Director, Pediatric Heart Transplant Services Cincinnati Children’s Hospital Medical Center Professor, Department of Pediatrics University of Cincinnati Cincinnati, Ohio, USA</td>
<td>Clifford Chin, MD, is Medical Director of Pediatric Heart Transplant Services at Cincinnati Children’s Hospital Medical Center and Professor in the Department of Pediatrics at the University of Cincinnati. His academic focus has been in the field of cardiac transplantation with particular interests in HLA antibodies, graft coronary artery disease, and reduction of risk factors to improve long-term outcomes.</td>
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<td>J. Perren Cobb, MD</td>
<td>Section Chief of Pediatric Cardiology Phoenix Children's Hospital Phoenix, Arizona, USA</td>
<td>Dr. Mitchell Cohen is the current Section Chief of Pediatric Cardiology at Phoenix Children’s Hospital. His current areas of clinical research involve ways to minimize inappropriate implantable cardioverter defibrillator shocks in children and young adults and reducing sudden cardiac death through improved awareness and prevention. He currently serves on the scientific advisory council of the Sudden Arrhythmia Death Syndrome (SADS) Foundation and is the Chair of the Guidelines Committee for the Pediatric and Congenital Electrophysiology Society (PACES).</td>
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<tr>
<td>Mitchell Cohen, MD, FACC, FHRs</td>
<td>Section Chief of Pediatric Cardiology Phoenix Children's Hospital Phoenix, Arizona, USA</td>
<td>Dr. Mitchell Cohen is the current Section Chief of Pediatric Cardiology at Phoenix Children’s Hospital. His current areas of clinical research involve ways to minimize inappropriate implantable cardioverter defibrillator shocks in children and young adults and reducing sudden cardiac death through improved awareness and prevention. He currently serves on the scientific advisory council of the Sudden Arrhythmia Death Syndrome (SADS) Foundation and is the Chair of the Guidelines Committee for the Pediatric and Congenital Electrophysiology Society (PACES).</td>
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<tr>
<td><strong>David S. Cooper, MD, MPH</strong></td>
<td>Dr. Cooper’s clinical interests and areas of research relate to many aspects of cardiac intensive care, including fluid overload and acute kidney injury in critical illness; near infrared spectroscopy in the CVICU; early extubation after neonatal and infant congenital heart surgery; impact of gestational age on outcomes; anticoagulation on extracorporeal life support; and analysis of morbidity/mortality in patients with congenital heart disease.</td>
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<tr>
<td><strong>John M. Costello, MD, MPH</strong></td>
<td>Dr. Costello is the Director of Inpatient Cardiology and the Medical Director of the Regenstein Cardiac Care Unit at the Ann &amp; Robert H. Lurie Children’s Hospital of Chicago. He is an Associate Professor of Pediatrics at Northwestern University Feinberg School of Medicine. He was recently elected to serve on the PCiCs Board of Directors. He is cardiac intensivist and an active clinical researcher. His work has included the investigation of hormonal therapies in children undergoing cardiac surgery, the epidemiology and prevention of healthcare associated infections in critically ill children, and outcomes in neonates with congenital heart disease.</td>
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<td><strong>Sheri Crow, MD, MS</strong></td>
<td>Dr. Sheri Crow is a consultant of pediatric critical care medicine at the Mayo Clinic School of Medicine in Rochester, Minnesota. Dr. Crow’s clinical interests and active areas of research include investigating the impact of cardiopulmonary bypass on the pediatric adrenal stress response, leveraging medical informatics to assist with perioperative comparative effectiveness research, and identifying risk factors for perioperative morbidity and mortality in adult congenital heart disease patients. Dr. Crow also serves as the chair of the Minnesota Congenital Heart Network, a collaborative clinical research initiative between the Mayo Clinic and University of Minnesota congenital heart programs.</td>
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<tr>
<td><strong>Martha A.Q. Curley, RN, PhD, FAAN</strong></td>
<td>Dr. Martha A.Q. Curley is the Ellen and Robert Kapito Professor in Nursing Science at the University of Pennsylvania School of Nursing with a joint appointment in Anesthesiology and Critical Care Medicine. She is also a nurse scientist in the Cardiovascular and Critical Care Nursing Program at Children’s Hospital Boston. Dr. Curley's research, funded by NHLBI, NINR and NICHD, has specifically focused on nurse-implemented interventions. Her current study, Randomized Evaluation of Sedation Titration for Respiratory Failure (RESTORE), is investigating alternative ways of managing sedation in infants and children supported on mechanical ventilation. Dr. Curley has developed and disseminated core metrics in the field of pediatrics including the State Behavioral Scale, Withdrawal Assessment Tool, and the Individualized Numeric Rating Scale.</td>
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<td><strong>Heidi Dalton, MD, FCCM</strong></td>
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<td><strong>Joseph A. Dearani, MD</strong></td>
<td>Dr. Dearani is a congenital heart surgeon, Professor of Surgery, and Chair of the Division of Cardiovascular Surgery at the Mayo Clinic in Rochester, Minnesota. He trained in general surgery at Georgetown and Harvard. Postgraduate fellowship training in thoracic and cardiovascular surgery was taken at Mayo Clinic Rochester followed by fellowship in congenital cardiac surgery and transplantation at Loma Linda University in California. Dr. Dearani has a longstanding interest and expertise in multi-valvular and aortic diseases in children and adults with congenital heart disease. His outside interests include music where he is an active jazz saxophonist performing in multiple concerts on an annual basis.</td>
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<td><strong>Megan del Corral, RN, BSN, CCRN</strong></td>
<td>Megan del Corral joined the Heart Institute of Cincinnati Children’s Hospital in 2012 as part of the Congenital Heart Surgery team. Her work experience as a CCRN includes Boston Children’s Hospital and Texas Children’s Hospital where she fulfilled the role of the VAD Coordinator under the direction of Dr. David Morales. Megan’s clinical focus is in mechanical circulatory support. Her scope of expertise extends to research, clinical practice, education, and innovation in the field of pediatric VADs. She has experience caring for children on a wide variety of devices including the SynCardia TAH, HeartWare, HeartMate II, RotaFlow, and the Berlin Heart Excor. She also has discharged adolescents on 3 different types of VADs and helps run their outpatient clinic and management. Because of her expertise in pediatric outpatient VAD care, she is currently on an FDA grant submitted for conversion of the CircuLite VAD to an outpatient pediatric device. She is the active co-chair for the pediMACS coordinator committee as well as a member of the PCiCs and AACCN.</td>
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<td><strong>Ali Dodge-Khatami, MD, PhD</strong></td>
<td>Ali Dodge-Khatami, MD, PhD, is Chief of Pediatric Cardiac Surgery and Head of the Congenital Heart Program at the University Heart Center in Hamburg, Germany. Dr. Dodge-Khatami earned his medical degree at the University of Geneva Medical School in Switzerland, completed his residency in cardiovascular surgery at CHUV in Lausanne, Switzerland, and completed fellowships in congenital cardiothoracic surgery at Children’s Memorial Hospital in Chicago and at Great Ormond Street Hospital for Sick Children in London. His research interests include single ventricle physiology, valve and conduit surgery, and humanitarian congenital cardiac surgery development.</td>
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<th>Name</th>
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<tr>
<td>Amy L. Donnellan, PNP-AC</td>
<td>Acute Care Pediatric Nurse Practitioner</td>
<td>Heart Institute</td>
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<td>Cincinnati Children’s Hospital Medical Center</td>
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<td>Cincinnati, Ohio, USA</td>
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<tr>
<td>Yves d’Udekem, MD, PhD, FARCS</td>
<td>Deputy Director, Department of Cardiac Surgery</td>
<td>Royal Children’s Hospital Melbourne</td>
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<td>Melbourne, Victoria, Australia</td>
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<td>Blaine Easley, MD, FAAP</td>
<td>Associate Professor</td>
<td>Baylor College of Medicine</td>
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<td>Texas Children’s Hospital</td>
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<td>Houston, Texas, USA</td>
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<td>Carrie Ellis</td>
<td>Vice President of Development and Marketing</td>
<td>Children’s HeartLink</td>
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<td>Minneapolis, Minnesota, USA</td>
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<tr>
<td>Jacklyn M. Faulseit, RN, BSN</td>
<td>Acute Care Pediatric Nurse Practitioner</td>
<td>CICU</td>
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<td>Philadelphia, Pennsylvania, USA</td>
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<td>Timothy F. Feltes, MD, FACC, FAHA</td>
<td>Professor of Pediatrics</td>
<td>The Ohio State University</td>
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<td>Chief of Pediatric Cardiology</td>
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<td>Nationwide Children’s Hospital</td>
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<td>Columbus, Ohio, USA</td>
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<td>Michael G. Gaies, MD, MPH</td>
<td>Assistant Professor</td>
<td>Department of Pediatrics and Communicable Diseases</td>
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<td>University of Michigan Health System</td>
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<td>Ann Arbor, Michigan, USA</td>
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<td>James William Gaynor, MD</td>
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<td>Nancy Ghanayem, MD</td>
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Stuart L. Goldstein, MD, FAAP  
Professor of Pediatrics  
University of Cincinnati College of Medicine  
Director, Center for Acute Care Nephrology  
Cincinnati Children’s Hospital Medical Center  
Cincinnati, Ohio, USA  

Dr. Stuart L. Goldstein, MD, is Professor of Pediatrics at the University of Cincinnati College of Medicine and Director of the Center for Acute Care Nephrology at Cincinnati’s Children’s Hospital Medical Center. Dr. Goldstein is an elected member of the Kidney Disease Improving Global Outcomes (KDIGO) Acute Kidney Injury Management Guidelines Committee. Dr. Goldstein has been an active investigator in the field of pediatric acute kidney injury (AKI) since 2000. His primary areas of research are in AKI epidemiology, outcomes, acute renal replacement therapy provision, cardiorenal syndromes and investigation of novel urinary AKI biomarkers in children. Dr. Goldstein has a strong record of collaboration as evidenced by establishment and direction of Prospective Pediatric Continuous Renal Replacement Therapy. He has over 100 peer-reviewed publications.

Eric M. Graham, MD  
Associate Professor  
Department of Pediatrics  
Division of Pediatric Cardiology  
Medical University of South Carolina (MUSC)  
Charleston, South Carolina, USA  

Dr. Graham earned his MD at the University of Illinois. He then completed both his pediatric residency and pediatric cardiology fellowship at MUSC. Dr. Graham has interest and expertise in pediatric cardiac critical care with special interest in single ventricle physiology and the perioperative management of neonates. He participates in many multidisciplinary clinical trials, has presented his work at regional, national, and international meetings, has published numerous articles, and has been the recipient of awards and grants to support his research. Dr. Graham is also the Director of the Pediatric Cardiology Training Program at MUSC and Co-Director of the Children’s Hospital Infection Prevention Committee.

Peter J. Gruber, MD, PhD  
Associate Professor  
Chief of Pediatric Cardiothoracic Surgery  
Primary Children’s Medical Center  
Salt Lake City, Utah, USA  

Dr. Gruber completed his undergraduate and medical training at the University of Pennsylvania with a degree in biochemistry and biophysics and followed by an MD, PhD in the MSTP program with postgraduate training at Johns Hopkins Hospital and the Children’s Hospital of Philadelphia. He is currently the D. Rees and Eleanor T. Jensen Presidential Chair and Chief of Pediatric Cardiothoracic Surgery at Primary Children’s Medical Center. Scientifically, he is best known for his work in human congenital heart disease particularly investigations in the molecular basis of defects of cardiac morphogenesis and their relationship to cardiac progenitor cells. His clinical interests revolve around all aspects of complex congenital cardiac repairs and transplantation. Dr. Gruber is a member of AOA and the American Society for Clinical Investigation.

Anne-Marie Guerguerian, MD, PhD, FRCP, FAAP  
Assistant Professor of Pediatrics and Critical Care Medicine  
Scientist in Neuroscience and Mental Health Research Institute, The Hospital for Sick Children (SickKids)  
University of Toronto  
Toronto, Ontario, Canada  

Dr. Guerguerian received her MD from the Université de Montréal and followed up with a specialization in pediatrics. She then completed a post-doctoral fellowship in the Department of Critical Care Medicine at SickKids. She attended Johns Hopkins University to complete another post-doctoral fellowship in the Department of Anesthesiology & Critical Care Medicine at the Bloomberg School of Public Health, Graduate Training Program in Clinical Investigation. Dr. Guerguerian is a member of the Royal College of Physicians and Surgeons of Canada, has certification with Pediatrics and Critical Care Medicine, the American Board of Pediatrics and Pediatrics & Pediatric Critical Care Sub-Specialist. In 2002 Dr. Guerguerian served as an instructor in Pediatric Critical Care Medicine in the Department of Anesthesiology & Critical Care Medicine at Johns Hopkins University and in 2003 became an Assistant Professor. She joined SickKids in 2004.

Edward J. Hickey, MD  
The Hospital for Sick Children (SickKids)  
Toronto, Ontario, Canada  

Dr. Edward J. Hickey is a cardiovascular surgeon who has recently been appointed to faculty at SickKids Hospital in Toronto, Canada. Although originally from the UK, he completed his adult cardiac surgery training in Toronto and then undertook a 2-year congenital cardiac surgery fellowship at SickKids. Dr. Hickey’s research interests have focused mainly on neurologic outcomes following neonatal cardiac surgery and clinical outcomes research. As part of his clinical outcomes projects, he has developed an interest in novel approaches to clinical performance monitoring.

Patricia Hickey, PhD, RN, MBA, CPHQ, NEA-BC, FAAN  
Vice President  
Cardiovascular and Critical Care Services  
Children’s Hospital Boston  
Boston, Massachusetts, USA  

Dr. Patricia Hickey is Vice President of Cardiovascular and Critical Care Services at Children’s Hospital Boston. Her program of nursing administration research is focused on the linkages among nursing work environment characteristics and risk-adjusted pediatric outcomes. She has also examined and published the statewide and national impact of California’s staffing legislation on pediatric cardiac surgery outcomes. Her policy work has been influential at the state level with the development of an interdisciplinary model for legislative action in Massachusetts. Nationally, she is a member of the AAN’s Expert Panel on Magnet Advancement and the ACC’s Pediatric Quality Metric Steering Committee. Internationally, she serves on the executive committee of the International Quality Improvement Collaborative for Reducing Pediatric Cardiac Surgery Mortality in the Developing World. She holds faculty positions at Harvard University, Northeastern University, Boston College, and Jiao Tong University, Shanghai, China.

Pamela S. Hilvers, MD  
Assistant Professor of Pediatrics  
Division of Neonatology  
Baylor College of Medicine  
Texas Children’s Hospital  
Houston, Texas, USA  

Pamela S. Hilvers, MD, is Assistant Professor of Pediatrics in the Division of Neonatology at Baylor College of Medicine/Texas Children’s Hospital in Houston. She earned her MD at West Virginia University School of Medicine in Morgantown, West Virginia where she also completed a residency in pediatrics and a neonatal-perinatal medicine fellowship. Dr. Hilvers’s current academic interests include cardiovascular care of the critically ill newborn, congenital heart disease, bronchopulmonary dysplasia, and ECMO.

Timothy M. Hoffman, MD, FACC, FAHA  
Associate Medical Director of Cardiology  
Medical Director, Heart Transplant and Heart Failure Program  
Nationwide Children’s Hospital  
Heart Center Associate  
Professor of Pediatrics  
The Ohio State University College of Medicine  
Columbus, Ohio, USA  

Dr. Timothy M. Hoffman is on the Board of Directors for PCICS and has been serving as Treasurer since 2007. He also serves as the Pediatric Liaison to the AHA Heart Transplant and Heart Failure Committee. He is on the Board of Trustees for the American College of Cardiology – Ohio Division. Dr. Hoffman is involved in several multicenter research collaborations focusing on support of the failing myocardium and pediatric heart transplant care.
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| **Parvathi U. Iyer, MD, MBBS** | Director, Pediatric Cardiac Intensive Care Fortis Escorts Heart Institute (FEHI) New Delhi, India  
Dr. Parvathi U. Iyer is currently Director of Pediatric Cardiac Intensive Care at FEHI in New Delhi — one of the busiest pediatric cardiology programs in India. She was closely involved in setting up the pediatric program at FEHI in 1995 — the first integrated program that incorporated an intensivist in India. She graduated from the All India Institute of Medical Sciences in New Delhi and trained in pediatric and neonatal intensive care at the Royal Children’s Hospital in Melbourne and Royal Prince Alfred Hospital in Sydney. Her interests are related to topical problems relevant to India and include late-presenting congenital heart disease; malnutrition; low-cost intensive care strategies; quality control; and accelerated nurse and resident training modules. |
| **Jeffrey P. Jacobs, MD, FACS, FACC, FCCP** | Surgical Director, Heart Transplantation Program   
Director of Extracorporeal Life Support Program   
All Children’s Hospital, St. Petersburg, Florida, USA  
Clinical Professor, Department of Surgery University of South Florida Tampa, Florida, USA  
Dr. Jacobs is an Attending Thoracic and Cardiovascular Surgeon at Johns Hopkins Children’s Heart Surgery, All Children’s Hospital and Florida Hospital for Children. He is also Surgical Director of the Heart Transplantation Program and Director of the Extracorporeal Life Support Program at All Children’s Hospital. Dr. Jacobs is a Clinical Professor in the Department of Surgery at the University of South Florida. Dr. Jacobs chairs 3 Society of Thoracic Surgeons (STS) Task Forces related to the STS Database: In 2006, 2007, and 2009, he was appointed Chair of the STS Congenital Heart Surgery Database Task Force, STS Task Force on Linked Registry Proposals (formerly known as the STS Database Task Force on Longitudinal Follow-up and External Linkages), and STS Database Public Reporting Task Force, respectively. |
| **Howard E. Jeffries, MD, MPH, MBA** | Medical Director, Continuous Performance Improvement and Clinical Effectiveness  
Seattle Children’s Hospital  
Clinical Associate Professor of Pediatrics University of Washington School of Medicine Seattle, Washington, USA  
Howard E. Jeffries, MD, MPH, MBA, is a cardiac intensivist and the Medical Director of Continuous Performance Improvement and Clinical Effectiveness at Seattle Children’s Hospital. He is a Clinical Associate Professor of Pediatrics at the University of Washington School of Medicine. He is board certified in pediatrics and pediatric critical care medicine. He has published chapters and peer-reviewed articles with an emphasis on cardiac intensive care, clinical informatics, outcomes assessment, and quality improvement. He has edited a textbook on leadership for lean transformation in healthcare. |
| **John Lynn Jeffries, MD, MPH, FAAP, FACC** | Director, Advanced Heart Failure and Cardiomyopathy  
Co-Director, Cardiovascular Genetics  
Associate Director, Heart Institute Research Core  
Heart Institute at Cincinnati Children’s Hospital Medical Center  
Associate Professor, University of Cincinnati Department of Pediatrics Cincinnati, Ohio, USA  
Dr. Jeffries completed his combined pediatric and adult cardiology training at the Baylor College of Medicine in Houston, Texas at the Texas Children’s Hospital and the Texas Heart Institute. He has authored numerous peer-reviewed manuscripts and book chapters on cardiomyopathy, cardiovascular genetics, and adults with congenital heart disease. His current research interests include heritable causes of vascular disease, novel drug therapies for advanced heart failure, novel gene discovery in cardiomyopathy, characterization and management of left ventricular noncompaction, and early diagnosis and management of chemotherapy-induced cardiotoxicity. He is on the editorial board of the Texas Heart Institute Journal and is an active member of numerous professional organizations including The Heart Failure Society of America, the American College of Cardiology, and the American Heart Association. |
| **Anitha John, MD, PhD** | Attending Physician  
Department of Cardiology  
Children’s National Medical Center  
Washington Hospital Center  
Washington Adult Congenital Heart Program Washington, District of Columbia, USA  
Dr. John works as an attending physician at Children’s National Medical Center and Washington Hospital Center as part of the Washington Adult Congenital Heart Program. Dr. John completed her residency in internal medicine and general pediatrics at Brown University. She continued her training in pediatric cardiology at the Children’s Hospital of Philadelphia followed by advanced subspecialty training in adult congenital cardiology at the Mayo Clinic. Dr. John is active in clinical research focused on the clinical outcomes of congenital heart disease patients across their lifespan. Her specific areas of interest include aortopathies in congenital heart disease and liver dysfunction in the single ventricle population. |
| **Melissa B. Jones, MSN, CPNP-AC** | Nurse Practitioner/ Nurse Educator  
Cardiac Intensive Care Unit  
Children’s National Medical Center Washington, District of Columbia, USA  
Melissa B. Jones, MSN, CPNP-AC is a nurse practitioner and nurse educator in the Cardiac Intensive Care Unit at Children’s National Medical Center in Washington, DC. She received her Master’s degree from University of Pennsylvania, Critical Care Nurse Practitioner Program in 2008. Her focus as an educator is to provide ongoing education to experienced ICU nurses through monthly case discussions, lecture series, and interdisciplinary simulations. |
| **Stephen F. Kaine, MD, FAAP, FACC, FSCAI** |  
Dr. Kaltman is a pediatric cardiologist and electrophysiologist. Currently, he serves as the Chief of the Heart Development and Structural Diseases Branch in the National Heart, Lung, and Blood Institute of the National Institutes of Health. He oversees and develops clinical and translational research projects in the field of pediatric cardiovascular disease. He is the project scientist for the Pediatric Cardiac Genomics Consortium, a multicenter translational research group investigating the association of genetic variation with congenital heart disease diagnosis and outcome. He is also part of the project team for the Pediatric Heart Network, a multicenter clinical research network conducting studies in children with congenital heart disease. Dr. Kaltman sees patients one day a week at Children’s National Medical Center in Washington, DC. |
## Faculty (Continued)

**Roxanne Kirsch, MD, FRCPC, FAAP**  
Attending Physician  
The Children's Hospital of Philadelphia  
Instructor of Pediatrics  
Perelman School of Medicine  
University of Pennsylvania  
Philadelphia, Pennsylvania, USA  

Dr. Kirsch’s clinical and research interests include ethical issues and dilemmas with the implementation of innovation at an institutional level and the associated learning curves involved. She is also interested in ethical challenges surrounding medical futility in the current medical era. She is pursuing a master’s degree in bioethics with the University of Pennsylvania. Dr. Kirsch is also an instructor with the simulation center at The Children’s Hospital of Philadelphia. She facilitates mock code scenarios in the ward, post-procedure recovery, and cardiac intensive care units, as well as teaching airway courses to nurse practitioners. She has interests in simulation as a tool for healthcare providers to improve care delivery and recognition of acute changes in patient clinical status.

**Darren Klugman, MD**  
Attending Physician  
Cardiac Intensive Care Unit  
Director of Medical Safety  
Children's National Medical Center  
Washington, District of Columbia, USA  

Trained in critical care and cardiology, Dr. Klugman is an attending in the Cardiac Intensive Care Unit and is the Director of Medical Safety at Children’s National Medical Center. Areas of clinical interest include heart failure and management of single ventricle patients. Dr. Klugman’s research interests include myocardialis and heart failure in the single ventricle patient following palliation. He lives in Chevy Chase, Maryland with his wife and 3 children.

**Lisa M. Kohr, RN, MPH, MSN, CPNP-PC/AC**  
Pediatric Nurse Practitioner  
Children's Hospital of Philadelphia  
Philadelphia, Pennsylvania, USA  

Lisa M. Kohr, RN, MPH, MSN, CPNP-PC/AC, has been working in fields of cardiology and cardiovascular surgery since 1987. She started out as a staff nurse in the CICU at Children's Hospital of Boston. She received her MSN from Northeastern University in Boston and her MPH from the University of Illinois in Chicago. Ms. Kohr has been a pediatric nurse practitioner (PNP) since 1991 first working in Boston and then setting up the cardiovascular surgery nurse practitioner program in Chicago. She is an international speaker, ICU educator, and has multiple publications on the topics related to care of the children with CHD. She is currently a PNP at Children’s Hospital of Philadelphia and a doctoral student at the University of Pennsylvania.

**Nikoleta S. Kolovos, MD, FAAP**  
Assistant Professor of Pediatrics  
Chief, Medical/Surgical/Trauma Service  
Medical Director, Pediatric Intensive Care Unit  
Medical Director, Rapid Response Team  
Medical Director, Fast Track Service  
Co-chair, Washington University School of Medicine Patient Safety Physician Council  
Washington University School of Medicine in St. Louis, Missouri, USA  

Nikoleta S. Kolovos, MD, FAAP is a 1996 graduate of the University of Pittsburgh School of Medicine. She completed residency training in pediatrics and fellowship in pediatric critical care medicine at C.S. Mott Children's Hospital at the University of Michigan, Ann Arbor. She joined the faculty at Washington University School of Medicine in St. Louis in 2002 and currently serves as the Medical Director of the Pediatric Intensive Care Unit at St. Louis Children's Hospital. Her interest in patient safety and quality began early in her career and completed the Intermountain Health Care Advanced Training Program in Health Care Quality Improvement in 2006 and the Institute for Healthcare Improvement’s Patient Safety Officer Executive Development Program in 2009.

**Terra Lafranchi, RN, MSN, NP-C**  
Fetal Cardiologist and Fetal Cardiac Intervention Coordinator  
Advanced Fetal Care Center and Cardiovascular Clinic  
Children's Hospital of Boston  
Boston, Massachusetts, USA  

Terra Lafranchi, RN, MSN, NP-C, is the Fetal Cardiology and Fetal Cardiac Intervention Coordinator in the Advanced Fetal Center and Cardiovascular Clinic at Children's Hospital Boston where she is also a pediatric cardiology nurse practitioner. Ms. Lafranchi earned her BSN magna cum laude from Northeastern University, completed a NICU certification from University of California, San Francisco Medical Center, and earned her MSN with a family nurse practitioner concentration from Boston College.

**Linda M. Lambert, MSN, FNP**  
Nurse Practitioner  
Cardiothoracic Surgery  
Primary Children’s Medical Center  
Salt Lake City, Utah, USA  

Linda M. Lambert, MSN, FNP, is a nurse practitioner in the Cardiothoracic Surgery division of Primary Children’s Medical Center in Salt Lake City, Utah. Ms. Lambert earned her MSN with an FNP focus from Westminster College in Salt Lake City. She is currently a study coordinator for a trial on single ventricle reconstruction for the Pediatric Heart Network and a research coordinator for multiple multicenter studies on the subjects of tricuspid atresia, left ventricular outflow tract obstruction, and pulmonary conduits. Ms. Lambert has authored or co-authored several articles in peer-reviewed journals including the Annals of Thoracic Surgery and Pediatrics.

**Peter C. Laussen, MBBS, FICCM**  
Chief of Critical Care Medicine  
The Hospital for Sick Children ( SickKids)  
Professor of Anaesthesia  
University of Toronto  
Toronto, Ontario, Canada  

Peter Laussen graduated from Melbourne University Medical School and subsequently completed fellowships in anaesthesia and pediatric critical care medicine at the Austin Hospital and Royal Children’s Hospital, Melbourne. In 2002 was appointed Chief of the Division of Cardiac Intensive Care at Children’s Hospital. In 2002, he became the first incumbent of the Dolly D. Hansen Chair in Pediatric Anaesthesia at Children’s Hospital, and in 2008 a Professor of Anaesthesia at Harvard Medical School. He is a founding member of http://www.risky-business.com/ and has co-organized a number of national and international conferences directed at addressing human and system factors using lessons learned from high-risk industries in an effort to improve the safety and quality of healthcare. In September 2012, he was appointed as Chief of Critical Care Medicine at the Hospital for Sick Children in Toronto and as Professor in Anaesthesia at the University of Toronto.

**Richard J. Levy, MD**  
Associate Chief, Anesthesiology and Pain Medicine  
Director, Cardiac Anesthesia  
Children’s National Medical Center  
George Washington University  
Washington, District of Columbia, USA  

Richard J. Levy, MD, is an Associate Chief of Anesthesiology and Pain Medicine and Director of Cardiac Anesthesia at Children’s National Medical Center. He is board-certified in pediatric, anesthesiology, and pediatric critical care medicine. Dr. Levy completed a pediatrics residency at The Children's Hospital of Philadelphia and an anesthesia residency at the University of Pennsylvania. He went on to complete fellowships in pediatric anesthesiology, pediatric cardiothoracic anesthesia, and pediatric critical care medicine, all at The Children’s Hospital of Philadelphia. Dr. Levy is actively involved in laboratory research. He was a trainee on a National Institutes of Health (NIH)-Institutional Training Grant and subsequently the principal investigator on an NIH-funded clinical scientist development award.
## FACULTY (CONTINUED)

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<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Institution</th>
<th>Location</th>
<th>Description</th>
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<tbody>
<tr>
<td>Patricia Lincoln, RN, MS, CNS-BC, CCRN</td>
<td>Clinical Nurse Specialist</td>
<td>Cardiovascular Intensive Care Unit</td>
<td>Chicago, Illinois, USA</td>
<td>Patricia Lincoln RN, MS, CNS-BC, CCRN, is a certified Clinical Nurse Specialist in the Cardiovascular Intensive Care Unit at Children’s Hospital Boston. She earned her undergraduate degree at University of Northern Colorado and her Master of Science degree from the University of Colorado Health Sciences Center. Patricia concentrates on evidence-based practice and has focused her career on mentoring the nurse at the bedside. She has a strong involvement in nursing research and policy development and also coordinates tours with the Advanced Fetal Care department for families with a prenatal diagnosis of congenital heart disease. Patricia is recognized as an expert in the area of pediatric cardiovascular intensive care and has multiple presentations and publications to her credit.</td>
</tr>
<tr>
<td>Angela Lorts, MD</td>
<td>Assistant Professor of Pediatrics</td>
<td>Cincinnati Children's Hospital Medical Center (CCHMC)</td>
<td>Cincinnati, Ohio, USA</td>
<td>Angela Lorts, MD, is Assistant Professor of Pediatrics at the University of Cincinnati and CCHMC. She earned her MD at Creighton University School of Medicine and completed a pediatric internship and residency at the University of Colorado Health Sciences. Dr. Lorts completed her pediatric cardiology fellowship at CCHMC and a pediatric critical care fellowship at the University of Michigan. Her clinical interests are acute heart failure management and pediatric ventricular assist devices. Her research interests include mechanisms of myocardial extracellular matrix remodeling.</td>
</tr>
<tr>
<td>Graeme MacLaren, MBBS, FCCM</td>
<td>Director of Cardiothoracic Intensive Care</td>
<td>National University Hospital</td>
<td>Queenstown, Singapore</td>
<td>Graeme MacLaren is an adult and paediatric intensivist who works in both Singapore and Australia. He is Director of Cardiothoracic Intensive Care at the National University Hospital of Singapore, Associate Professor at the National University of Singapore, and a visiting intensivist at the Royal Children’s Hospital, Melbourne, Australia. His interests include extracorporeal life support, perioperative echocardiography, nosocomial sepsis and cardiac intensive care in all ages. He is a member of the Steering Committee of the Extracorporeal Life Support Organization (ELSO) and Vice President (Asia-Pacific) of the Pediatric Cardiac Intensive Care Society.</td>
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<td>Duncan Macrae, MB</td>
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<tr>
<td>Kevin O. Maher, MD</td>
<td>Associate Professor of Pediatrics</td>
<td>Emory University School of Medicine</td>
<td>Atlanta, Georgia, USA</td>
<td>Dr. Maher is an Associate Professor of Pediatrics at Emory University School of Medicine and Children’s Healthcare of Atlanta. He is a cardiac intensivist and researcher splitting his time between clinical and research efforts. The focus of his research is the design and development of pediatric medical devices, the use of natriuretic peptides in the pediatric cardiac patient, and the development of pediatric cardiac nanomedicine techniques in the study of pediatric heart disease. Dr. Maher is the Co-director of the Atlanta Pediatric Device Consortium and the Director of the Pediatric Cardiac Nanomedicine at Children’s of Atlanta-Emory and Georgia Tech.</td>
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<tr>
<td>Bradley S. Marino, MD, MPP, MSCE</td>
<td>Attending Cardiac Intensivist, Heart Institute Research Core</td>
<td>University of Cincinnati</td>
<td>Cincinnati, Ohio, USA</td>
<td>Bradley S. Marino, MD, MPP, MSCE, is an Associate Professor of Pediatrics at the University of Cincinnati’s College of Medicine and an attending cardiac intensivist in Cincinnati Children’s Hospital Medical Center’s CICU. Dr. Marino also serves as the Director of the Heart Institute Research Core and the Heart Institute Neurodevelopmental Clinic. His research interests are on the impact of neurodevelopmental, psychosocial, and physical morbidities on quality of life, functional status, and behavioral and emotional functioning in the high-risk complex congenital heart disease population. Dr. Marino earned his medical degree from Harvard Medical School. He completed his pediatric residency at Johns Hopkins Hospital and a combined fellowship in cardiology and critical care medicine at The Children’s Hospital of Philadelphia.</td>
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<tr>
<td>Constantine Mavroudis, MD</td>
<td>Director, Congenital Heart Institute</td>
<td>Florida Hospital for Children</td>
<td>Orlando, Florida, USA</td>
<td>Dr. Mavroudis is Director of the Congenital Heart Institute at the Florida Hospital for Children. He is well recognized in his field both nationally and internationally. He has published over 400 peer-reviewed articles and book chapters. He is the Editor of the standard textbook, Pediatric Cardiac Surgery, now in its fourth edition. He has also served as editor or co-editor for 6 other textbooks. He is a member and serves in leadership positions in the major thoracic surgery professional organizations. He is a past President of the Southern Thoracic Surgical Association and Congenital Heart Surgeon’s Society. He has developed expertise in the fields of complex congenital heart repairs, arrhythmia surgery, coronary artery surgery in children, and adult congenital heart interventions.</td>
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<tr>
<td>Mary E. McBride, MD</td>
<td>Attending Physician, Cardiology</td>
<td>Northwestern University Feinberg School of Medicine</td>
<td>Chicago, Illinois, USA</td>
<td>Mary McBride, MD, is an attending physician in cardiology at Ann &amp; Robert H. Lurie Children’s Hospital of Chicago and Assistant Professor of Pediatrics in the divisions of Cardiology and Critical Care Medicine at Northwestern University. She earned her MD from the University of Missouri Columbia School of Medicine and completed fellowships in cardiology and critical care medicine in the department of pediatrics at St. Louis Children’s Hospital. Dr. McBride’s research interests include education, training, and communication in healthcare settings as well as ECMO and pediatric heart transplant, and she has presented nationally on these topics. In 2012, Dr. McBride won the Outstanding Fellow Teaching Award from Washington University’s Department of Pediatrics.</td>
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### Faculty (Continued)

**Francis X. McGowan, Jr, MD, FAAP**  
**J.G. Reves Professor, Vice Chair for Research**  
Department of Anesthesiology  
Medical University of South Carolina (MUSC)  
Professor of Anesthesiology, Pediatrics, Cell Biology and Regenerative Medicine  
Chief, Division of Pediatric Anesthesia  
MUSC Children's Hospital  
Charleston, South Carolina, USA  

Dr. Frank McGowan is the J.G. Reves Professor, Vice Chair for Research in the Department of Anesthesiology at the Medical University of South Carolina in where he is also Professor of Anesthesiology, Pediatrics, Cell Biology and Regenerative Medicine and Chief of the Division of Pediatric Anesthesia at MUSC Children's Hospital. Previously, at Children's Hospital Boston, he was Professor of Anesthesiology (Pediatric), Children's Hospital Endowed Chair and Chief of the Division of Cardiac Anesthesia, and Director of the department's research laboratories. He has conducted original research and published more than 150 basic and clinical science articles and chapters related to injury mechanisms contributing to infant cardiac hypertrophic, ischemia-reperfusion, and inflammatory injury, and other topics related to pediatric anesthesiology.

**Michael McMullan, MD**

**Erik C. Michelfelder, Sr, MD**  
Director, Fetal Cardiac Program  
Co-Director of Cardiac Imaging  
Associate Professor of Pediatrics  
University of Cincinnati College of Medicine  
Cincinnati, Ohio, USA  

Erik C. Michelfelder Sr, MD is an Associate Professor of Pediatrics, University of Cincinnati College of Medicine. He is currently Director of the Fetal Heart Program, and Co-Director of Cardiac Imaging Services for the Heart Institute at Cincinnati Children's Hospital Medical Center. Dr. Michelfelder earned his MD from the Penn State University College of Medicine. He completed his residency in pediatrics at St. Christopher's Hospital for Children in Philadelphia and his cardiology fellowship at C.S. Mott Children's Hospital at the University of Michigan. His clinical and academic focus is fetal cardiology and echocardiography with an emphasis in noninvasive assessment of cardiac function and anatomic characterization of complex congenital heart disease.

**Erica Moltior-Kirsch, MD**  
Director, Pediatric ECMO  
Medical Director, Cardiac Critical Care  
Children's Mercy Hospitals & Clinics  
Kansas City, Missouri, USA  

Erica Moltior-Kirsch, MD, is Director of Pediatric ECMO and Medical Director of Cardiac Critical Care at Children's Mercy Hospitals & Clinics in Kansas City, Missouri and Associate Professor of Pediatrics at the University of Missouri. She earned her medical degree at the University of Michigan Medical School followed by a pediatric residency with the United States Air Force, a pediatric critical care fellowship with Children's Medical Center Dallas, and a senior clinical fellowship in cardiology at Children’s Hospital Boston. Dr. Moltior-Kirsch’s primary research interests are cardiopulmonary bypass-related inflammation, BNP levels in children undergoing congenital heart surgery, and ECMO/E-CPR.

**JoAnn Nieves, MSN, PNP-BC, ARNP, FAHA**  
Nurse Practitioner, Cardiology  
Miami Children’s Hospital  
Miami, Florida, USA  

Ms. Nieves began caring for children with congenital heart disease in 1978 at the Children’s Memorial Hospital in Chicago, Illinois. At Miami Children’s Hospital since 1988, she has worked in cardiovascular surgery and now cardiology as a nurse practitioner. Ms. Nieves has frequently lectured and completed research. Publications include the PICICS statement for pulmonary hypertension nursing care and sections in this 3rd edition of Nursing Care of the Critically Ill Child, edited by Mary Fran Hazinski. She is a Fellow of the American Heart Association, Cardiovascular Disease in the Young.

**James E. O’Brien, Jr, MD**

**Gabe Eston Owens, MD, PhD**  
Clinical Assistant Professor, Pediatric Cardiology  
Pediatric Cardiac Intensivist  
University of Michigan  
Ann Arbor, Michigan, USA  

Dr. Gabe Eston Owens is currently a pediatric cardiac intensivist at the University of Michigan as well as a physician scientist investigating therapeutic ultrasound (histotripsy), prolonged ex vivo organ culture and preservation, and variations of ECMO support for premature infants (artificial placenta). In addition to these clinical and research interests, Dr. Owens has participated in cardiac missions to El Salvador, providing expertise in presurgical case selection, operative planning, postoperative imaging, and postoperative ICU care.

**Melissa J. Parker, MD, MS, FRCP, FAAP**  
Assistant Professor of Pediatrics  
McMaster University  
Hamilton, Ontario, Canada  
Adjunct Clinical Assistant Professor  
University of Toronto  
Toronto, Ontario, Canada  

Dr. Parker is an Assistant Professor of Pediatrics at McMaster University and an Adjunct Clinical Assistant Professor of Pediatrics at the University of Toronto. She completed her medical degree at the University of Western Ontario followed by residency and fellowship training at the Hospital for Sick Children in Toronto. Dr. Parker holds certification in pediatrics, pediatric critical care medicine, and pediatric emergency medicine and she is a Fellow of the Royal College of Physicians and Surgeons of Canada and the American Board of Pediatrics. Her academic interests include pediatric resuscitation research, in particular pediatric shock management, and resuscitation quality improvement.
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<tr>
<td>Sara K. Pasquali, MD, MHS, FAAP</td>
<td>Associate Professor, Division of Pediatric Cardiology, C.S. Mott Children’s Hospital, University of Michigan, Ann Arbor, Michigan, USA</td>
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<tr>
<td>Dr. Pasquali is an Associate Professor in the Division of Pediatric Cardiology at C.S. Mott Children’s Hospital at the University of Michigan, and is also a faculty member at the Center for Healthcare Outcomes &amp; Policy. She co-directs the Michigan Congenital Heart Outcomes Research and Discovery (M-CHORD) Program at the Michigan Congenital Heart Center. Dr. Pasquali has formal training in biostatistics and epidemiology and earned a Masters of Health Sciences degree in clinical research. Her research focuses on evaluation of outcomes and quality in children undergoing heart surgery.</td>
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<tr>
<td>Daniel J. Penny, MD, PhD, MHA</td>
<td>Professor of Pediatrics, Baylor College of Medicine, Chief of Cardiology, Texas Children’s Hospital, Houston, Texas, USA</td>
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<tr>
<td>Dr. Penny is Professor of Pediatrics at Baylor College of Medicine and Chief of Cardiology at Texas Children’s Hospital in Houston. He earned his MD from the University of London, his PhD from Monash University in Australia, his MHA at Latrobe University in Australia, and various additional fellowships from Australia, Ireland, and New Zealand. Dr. Penny's research interests include congenital heart defects and disease in children and pulmonary hypertension in newborns. He has spoken nationally and internationally on these topics as well as a host of others. In 2011, Dr. Penny earned the &quot;For the People’s Health&quot; award from the Vietnam Health Ministry for his role in developing The Institute for the Treatment of Heart Disease in a city with limited access to cardiac procedures and surgeries.</td>
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<tr>
<td>Christine E. Peyton, MS, CCRN, CPNP-AC</td>
<td>Clinical Practice Specialist, CHHI Children’s Hospital Colorado, Aurora, Colorado, USA</td>
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<td>Christine E. Peyton, MS, CCRN, CPNP-AC, is a clinical practice specialist at Children’s Hospital Colorado in Aurora, Colorado. In this role, she promotes evidence-based practice for nurses in the CICU, educates nurses on congenital heart defects, and promotes clinical practice guidelines for the CICU. She earned her MSN from the University of Rhode Island and her MS from Boston College.</td>
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<tr>
<td>Roxann B. Pike, MD</td>
<td>Assistant Professor of Anesthesiology, Department of Anesthesiology, Mayo Clinic, Rochester, Minnesota, USA</td>
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<td>Roxanne B. Pike, MD, is Assistant Professor of Anesthesiology at the Mayo Clinic in Rochester, Minnesota. She earned her medical degree at the Stanford University School of Medicine and completed a residency in anesthesiology and a fellowship in cardiovascular anesthesiology at the Mayo Graduate School of Medicine. Her research interests include pediatric and adult congenital cardiac anesthesiology. Dr. Pike has authored or co-authored several publications in peer-reviewed journals including <em>The Annals of Thoracic Surgery</em>, <em>Pediatric Anesthesia</em>, and <em>The Journal of Thoracic Cardiovascular Surgery</em>.</td>
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<td>Elizabeth Price</td>
<td>Physician Assistant, Cardiovascular Intensive Care Unit, Lucile Packard Children’s Hospital at Stanford, Palo Alto, California, USA</td>
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<td>Ms. Price completed her undergraduate degree at the University of Vermont and attended the physician assistant program at Emory University. She has worked in adult and pediatric heart transplant and currently is in the cardiovascular intensive care unit at Lucile Packard Children’s Hospital at Stanford. Her interests include transplantation and mechanical support.</td>
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<tr>
<td>Tia Raymond, MD, FAAP</td>
<td>Medical City Children’s Hospital, Department of Pediatrics, Section of Pediatric Medicine, Cardiac Intensive Care, Dallas, Texas, USA</td>
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<td>Dr. Raymond is a board certified pediatrician and pediatric cardiologist by the American Board of Pediatrics and is a Fellow of the American Academy of Pediatrics. She received her Bachelor of Science degree from Pepperdine University and received her medical degree from the University of Texas Southwestern Medical School. She completed her internship and residency in pediatrics at Children’s Medical Center Dallas and her pediatric cardiology fellowship at Texas Children’s Hospital/Baylor College of Medicine in Houston, Texas. Following her cardiology fellowship, she completed training in pediatric cardiac intensive care at Texas Children’s Hospital. Dr. Raymond has expertise in pediatric cardiac critical care, including cardiac transplantation and ventricular assist devices.</td>
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<tr>
<td>Jeff Robbins, PhD</td>
<td>Chief of Molecular Cardiovascular Biology, Professor of Pediatrics, Associate Chair for Research, Executive Co-Director, The Heart Institute, Cincinnati Children’s Hospital Medical Center, Cincinnati, Ohio, USA</td>
</tr>
<tr>
<td>Jeff Robbins, PhD, is Chief of Molecular Cardiovascular Biology and Professor of Pediatrics; Associate Chair for Research; and Executive Co-Director of The Heart Institute, Cincinnati Children’s Hospital Medical Center. His early work led to the development of tools that are currently used worldwide to affect the protein complement of the heart. His work has focused on understanding the behavior of both the normal contractile proteins and the mutations that cause cardiovascular disease. He has served on and chaired numerous national research review committees for the National Institutes of Health and the American Heart Association. He currently serves on 11 editorial boards, is Associate Editor for a number of journals, and is cardiovascular section editor for the <em>Annual Review of Physiology</em>.</td>
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<tr>
<td>Joseph W. Rossano, MD, MS, FACC, FAAP</td>
<td>Assistant Professor of Pediatrics, University of Pennsylvania, Medical Director, Heart Transplantation, The Children’s Hospital of Philadelphia, Philadelphia, Pennsylvania, USA</td>
</tr>
<tr>
<td>Dr. Rossano is Assistant Professor of Pediatrics at the University of Pennsylvania and Medical Director of Heart Transplantation at The Children’s Hospital of Philadelphia. He earned his MD from the University of Arizona College of Medicine and his MS in clinical research from Baylor College of Medicine Graduate School of Biomedical Sciences. His research interests include single ventricle patients, heart transplantation, pulmonary hypertension, and pediatric heart failure. Dr. Rossano has lectured on these topics regionally, nationally, and internationally. He has authored or co-authored several manuscripts in peer-reviewed journals including <em>Critical Care Medicine, Annals of Pharmacotherapy</em>, and <em>Journal of Cardiac Failure</em>, and he is a reviewer for many cardiology and intensive care journals.</td>
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</tbody>
</table>
### Anthony F. Rossi, MD
**Director**
Division of Cardiac Critical Care Medicine  
Miami Children’s Hospital  
Clinical Professor of Pediatrics  
Herbert Wertheim College of Medicine  
Florida International University  
Miami, Florida, USA

Dr. Rossi is currently the Director of the Division of Cardiac Critical Care Medicine at Miami Children’s Hospital in Miami, Florida. He is a Clinical Professor of Pediatrics at the Florida International University Herbert Wertheim College of Medicine. He was previously the Medical Director of the Pediatric Cardiac Intensive Care Unit and Heart Transplantation at Mount Sinai Medical Center in New York. He now has over 20 years of experience directing cardiac intensive care programs, which makes him old.

### Cecilia St. George-Hyslop, BScn, RN, BA Gen MEd, CNCCP(C)
**Nurse Educator, Cardiac Critical Care**  
**Advance Nursing Practice Educator**  
**Labatt Family Heart Centre**  
**Cardiac Critical Care Unit**  
**The Hospital for Sick Children (SickKids)**  
**Toronto, Ontario, Canada**

Cecilia St. George-Hyslop is the Advanced Nursing Practice Educator in the Labatt Family Heart Centre’s Cardiac Critical Care Unit at the Hospital for Sick Children. She has held leadership positions with The Canadian Association of Critical Care Nurses including Paediatric Consultant and President of the Toronto Chapter and President of the National Board of Directors until 2010. She has been an invited speaker at many local, national, and international forums. Ms. St. George-Hyslop enjoys teaching her fellow colleagues on education, simulation, continuous renal replacement therapy, ventricular assist devices (i.e., Berlin Heart) and paediatric cardiac critical care. She has had a long and healthy career at the Hospital for Sick Children and continues to enjoy teaching, learning, and mentoring.

### Stephen J. Roth, MD, MPH
**Chief of Pediatric Cardiology**  
**Director, Children’s Heart Center**  
**Lucile Packard Children’s Hospital at Stanford**  
**Professor of Pediatrics and Chief of the Division of Pediatric Cardiology**  
**Stanford University School of Medicine**  
**Palo Alto, California, USA**

Dr. Stephen Roth is a pediatric cardiologist who subspecializes in pediatric cardiac intensive care. At Lucile Packard Children’s Hospital, he serves as the Director of the Children’s Heart Center and Medical Director of the 20-bed Critical Care Unit. At Stanford University School of Medicine, he is Professor of Pediatrics (Cardiology) and Chief of the Division of Pediatric Cardiology. He obtained his MPH from the Harvard School of Public Health and is currently MD from Yale Medical School. His current research focuses on reducing the morbidity related to cardiovascular surgery in neonates, infants, and young children in the intensive care setting.

### Joshua Salvin, MD, MPH

### Mark Scheuer, MD

### Alicia Schmidt, RN, MSN
**ECMO Program Coordinator**  
**Phoenix Children’s Hospital**  
**Phoenix, Arizona, USA**

In 1989, Ms. Schmidt trained as an ECMO specialist, advancing to ECMO primer, and since 2000 has held a position as the ECMO Program Coordinator for Phoenix Children’s Hospital. Her primary clinical expertise is in neonatal intensive care nursing with expansion into pediatric intensive care. She began her professional career as a respiratory therapist before earning her nursing degree. In 2009, she earned a Master’s degree in nursing from Grand Canyon University. Ms. Schmidt is a strong advocate for continuing education, evidence-based practice, and quality initiatives. Presently, she is the Coordinator at Large on the steering committee for ELRO, representing her coordinator colleagues. She is also an active member of the Logistic and Education Executive Subcommittee on Education.

### Steven Schwartz, MD, MS, FRCP(C)
**Head, Division of Cardiac Critical Care Medicine**  
**The Hospital for Sick Children (SickKids)**  
**Toronto, Ontario, Canada**

Dr. Schwartz is a cardiac intensivist and head of the Division of Cardiac Critical Care Medicine at the Hospital for Sick Children in Toronto. Dr. Schwartz has authored and co-authored numerous papers and book chapters on clinical care and underlying mechanisms of cardiac dysfunction in critically ill infants and children with congenital heart disease. He has published several papers on the effects of cardiopulmonary bypass on neonatal cardiac function and prevention of myocardial ischemia-reperfusion injury with corticosteroids. Metabolic alterations associated with pediatric cardiac surgery, especially those regarding glucose metabolism and insulin sensitivity, are currently a particular research focus for Dr. Schwartz. He is also a member of the PCICS board of directors.

### Lara Shekerdemian, MD, MB BCh, FAAP, FICCM, FRCPCH

### V. Ben Sivarajan, MD, MS, FRCP(C)
**Cardiac Intensivist**  
**The Hospital for Sick Children (SickKids)**  
**Assistant Professor of Critical Care Medicine & Paediatrics**  
**Faculty of Medicine, University of Toronto**  
**Toronto, Ontario, Canada**

Dr. Sivarajan earned his MD from the University of Toronto, completed his pediatric residency and Chief Residency at the Hospital for Sick Children. He subsequently completed fellowships at The Children’s Hospital of Philadelphia in cardiology and The Royal Children’s Hospital in Melbourne, Australia, in intensive care. He joined the faculty at the Hospital for Sick Children in 2007 while simultaneously completing a Master of Science at the School of Public Health from the University of Michigan. Dr. Sivarajan’s research interests include critical care outcomes and microcirculatory function in critical cardiac disease.

### Pirouz Shamszad, MD

### Joshua Salvin, MD, MPH

### Mark Scheuer, MD
**Sandy Staveski, RN, MS, CPNP-AC, CNS**  
Nurse Practitioner  
Cardiovascular Intensive Care Unit  
Lucile Packard Children's Hospital at Stanford  
Palo Alto, California, USA

Sandy Staveski, RN, MS, CPNP-AC, CNS, is a nurse practitioner in Lucile Packard Children’s Hospital Cardiovascular ICU. Her current appointment is divided between managing critically ill pediatric cardiac patients and performing nursing research. Additionally, Sandy is faculty at University of California at San Francisco School of Nursing in the Family Health Care Department. Her research focus is on developing nursing capacity and optimizing patient outcomes in the developed and developing world.

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**Prof. Dr. med Brigitte Stiller**  
Full Professor of Congenital Heart Disease  
Clinic of Congenital Heart Disease/ Pediatric Cardiology  
Zentrum für Kinder und Jugendmedizin  
University of Freiburg  
Freiburg im Breisgau, Baden-Württemberg, Germany

Prof. Dr. med Brigitte Stiller earned her Dr. med at the University of Cologne, completed training in general pediatrics at Universität zu Köln, and completed training and consulting in pediatric cardiology at the German Heart Institute Berlin. She is currently Director of the Clinic for Congenital Heart Disease and Pediatric Cardiology at the University Hospital, Freiburg and Professor of Pediatrics and Pediatric Cardiology at the University of Freiburg.

---

**Sarah A. Teele, MD**  
Attending Physician  
Cardiac Intensive Care Unit  
Boston Children’s Hospital  
Instructor of Pediatrics  
Harvard Medical School  
Boston, Massachusetts, USA

Dr. Teele completed a 4-year fellowship in pediatric cardiology and pediatric cardiac intensive care at Boston Children’s Hospital in 2008 and has been on staff in the CIU since that time. Her clinical responsibilities include the supervision of care to critically ill neonates, children and adults with congenital heart disease. She is involved in the teaching of the nursing staff in addition to the cardiology, critical care, and NICU fellows. Her areas of interest include mechanical support of the circulation, improvement of neurologic outcomes, and quality of life in our patient population.

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**Ravi R. Thiagarajan, MBBS, MPH**  
Cardiac Intensivist  
Assistant Professor of Pediatrics  
Boston Children’s Hospital  
Boston, Massachusetts, USA

Dr. Ravi Thiagarajan is a cardiac intensivist working in the CIU at Boston Children’s Hospital. His area of research is in mechanical circulatory support. He co-directs the cardiac ECMO program at Boston Children’s Hospital, and nationally, he co-chairs the ECMO registry of the Extracorporeal Life Support Organization.

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**Megan Tracey RN, MS, PNP-BC, CNS**  
Nurse Practitioner, CVICU  
Lucile Packard Children’s Hospital at Stanford  
Palo Alto, California, USA

Ms. Tracey is a nurse practitioner in the CVICU and the NP/PA supervisor for the Heart Center at Lucile Packard Children’s Hospital at Stanford. She previously worked at the University of California, San Francisco (UCSF) where she developed the NP role in pediatric cardiothoracic surgery. She was a nurse in the PCIU at UCSF. Prior to nursing, she worked as a pediatric echo tech, exercise physiologist, and cath lab tech at Boston Children’s Hospital. Ms. Tracey was an invited member of advisory boards for clinical trials in pediatrics and was the co-chair of the Perioperative Working Group for neurodevelopmental outcomes for patients with congenital heart disease. Active areas of research include utilizing the Synergy model and evaluating the impact of an advanced practice in an interstage home monitoring program.

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**Dawn Tucker, RN, MSN, CPCP-PC/AC, CPNP-AC**  
Clinical Director, Heart Center  
Children’s Mercy Hospitals and Clinics  
Kansas City, Missouri, USA

Dawn Tucker is a CVICU nurse practitioner at Children’s Mercy Hospital and Clinical Director of the Heart Center. She is an instructor at the Rush School of Nursing, Department of Women, Children and Family Health. Ms. Tucker’s clinical interests include advanced practice nurse outcomes, cardiopulmonary interactions, and neurodevelopmental outcomes for patients with congenital heart disease. Active areas of research include optimizing patient outcomes in the developed and developing world.

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**Gil Wernovsky, MD, FACC, FAAP**  
Associate Chief, Division of Pediatric Cardiology  
Director, Program Development, The Cardiac Center  
Medical Director, NeuroCardiac Care Program  
The Children’s Hospital of Philadelphia (CHOP)  
Professor of Pediatrics, Perelman School of Medicine  
University of Pennsylvania  
Philadelphia, Pennsylvania, USA

Dr. Wernovsky has been practicing pediatric cardiac intensive care and outpatient cardiology at Children's Hospital (Boston) and CHOP where he was the director of the CIU. His career goal is to identify modifiable factors in the perioperative care of infants that will improve life-long success. Dr. Wernovsky was a study physician in the Boston Circulatory Arrest Trial, PI of the PRIMACORP trial, has served on numerous data safety monitoring boards for clinical trials in pediatrics and was the co-chair of the Perioperative Working Group for the NHLBI’s Pediatric Heart Network. He has been an invited member of advisory boards of parent- and patient-support groups including The Congenital heart information network and The Children’s heart foundation.

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**David L. Wessel, MD**  
Senior Vice President, Center for Hospital-Based Specialties  
The Kairia Distinguished Professor of Critical Care Medicine  
Children’s National Medical Center  
Washington, District of Columbia, USA

Dr. Wessel was educated and trained in medicine at Oxford, Yale, and Harvard and joined Children’s National Medical Center in 2007. Prior to this appointment, he was Professor of Pediatrics (Anesthesiology) at Harvard Medical School and Senior Associate in Cardiology and Anesthesia at Children’s Hospital Boston. Dr. Wessel is internationally known for his pioneering work in caring for infants with heart disease. He was chief of the Cardiac Intensive Care Unit at Boston Children’s for many years and previously served as president of the Pediatric Cardiac Intensive Care Society. He is also a member of the National Institutes of Health DSMB for the National Institute of Allergy and Infectious Diseases’ multicenter trial networks for solid organ transplantation.
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| Gail Wright, MD           | Clinical Associate Professor | Division of Pediatric Cardiology     | Stanford University School of Medicine | Palo Alto, California, USA  
Dr. Gail Wright is a Clinical Associate Professor of Pediatrics in the Division of Pediatric Cardiology at the Stanford University School of Medicine. Her area of expertise is cardiovascular intensive care. Dr. Wright is actively engaged in education in the cardiology and critical care fellowship programs. Her clinical research has focused on outcomes of single ventricle patients and on ventricular assist device development. Dr. Wright is board certified in pediatric cardiology and pediatric critical care and trained at the University of Michigan. Prior to that, she worked as a general pediatrician in the Indian Health Service and completed medical school and residency at Johns Hopkins University.  |
| Vamsi V. Yarlagadda, MD   | Attending Physician          | Cardiovascular Intensive Care Unit   | Boston Children's Hospital       | Boston, Massachusetts, USA  
Vamsi Yarlagadda, MD, completed his pediatric residency at UT Southwestern in Dallas. He then completed dual fellowships in cardiology and critical care at Boston Children’s Hospital finally completing his training in 2008. He is currently attending staff in the CICU at Boston Children’s Hospital. He serves as the cardiovascular liaison to the pediatric transport team as well as the respiratory program at Boston Children's. Dr. Yarlagadda also maintains leadership positions within the resuscitation and mechanical support programs there. |
Our Cardiovascular Intensive Care Program provides a unique interface among Critical Care Medicine, Cardiology, Cardiothoracic Surgery, and Cardiac Anesthesia. Texas Children’s Hospital Cardiovascular Intensive Care Unit cares for over 1000 admissions per year; including preoperative care of newborns with congenital heart disease, thoracic organ transplantation, ECMO, ventricular assist devices, and one of the largest cardiomyopathy/heart failure populations in the country. Additionally, we pride ourselves in quality research experience available through the Texas Children’s Hospital and the Baylor College of Medicine. The Department of Pediatrics is currently the 4th most funded departments in country by the NIH. The Sections of Pediatric Cardiology and Pediatric Critical Care Medicine are the sites of NIH-funded Research Training Grants in Cardiology and Pulmonary Development.

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Children’s National Medical Center is a private nonprofit pediatric hospital located in Washington, DC and is ranked among the top children’s hospitals in the United States. With more than 120 beds devoted to medical, surgical, neurologic, newborn, and cardiac critical care, we are rapidly growing and expanding our clinical and research faculty. We consistently rank among the top ten children’s hospitals for NIH funding and are the only children’s hospital identified as the principal recipient of an NIH CTSA grant. The Division of Critical Care Medicine is one of seven clinical research sites in the NIH Pediatric Critical Care Research Network.

The new cardiac ICU is a 34,000 sq. foot state-of-the-art 26-bed unit with large private rooms, remote video and vital sign monitoring, novel capabilities for digital integration and graphic display, and a room dedicated to high fidelity simulation. Our multidisciplinary team is dedicated to improving outcomes through innovation and research and expanding the use of novel technologies in physiologic monitoring and neuroprotective treatments. Our physicians are board certified in multiple disciplines and many are national leaders in cardiac critical care and surgery, having won awards for innovative care and clinical research. According to the PHIS database, our adjusted complexity measure for cardiac surgery patients is the highest in country (2009-2011) with outcomes that are among the best in the nation.

Children’s National is recruiting licensed practitioners in programs related to congenital heart disease surgery, mechanical circulatory support, and heart transplantation. Visit www.ChildrensNational.org to learn more.
The Heart Institute at Cincinnati Children’s Hospital Medical Center was formed in 2008 with the mission to transform pediatric heart disease through the integration of clinical care, molecular cardiovascular research and education.

That mission is being realized each day. We are a referral center for patients from across the United States and the world; in 2012, we treated patients from 42 states and 19 countries, treating a total of almost 16,000 patients. The Heart Institute has 54 faculty conducting research, with 189 peer-reviewed publications in 2012.

As one of only 9 Pediatric Heart Network (PHN) core sites in North America, our strong research infrastructure, top investigators and novel research proposals have made us a member of this National Institutes of Health collaboration since 2006.

Cincinnati Children’s is the second-highest recipient of National Institutes of Health grants for pediatric research.

U.S. News & World Report ranked Cincinnati Children’s as one of the nation’s top 3 pediatric hospitals and the Heart Institute is ranked in the top 10 for heart care and heart surgery. But we’re far more than a number or ranking. We are changing the outcome in pediatric heart care for children worldwide.

The Heart Institute at Cincinnati Children’s Hospital Medical Center • 3333 Burnet Ave • Cincinnati, OH 45229
Phone: (513) 636-4432  www.cincinnatichildrens.org

The Hospital for Sick Children (SickKids) is recognized as one of the world’s foremost pediatric healthcare institutions and is Canada’s leading centre dedicated to advancing children’s health through the integration of patient care, research and education. Founded in 1875 and affiliated with the University of Toronto, SickKids is one of Canada’s most research-intensive hospitals and has generated discoveries that have helped children globally. Its mission is to provide the best in complex and specialized family-centered care; pioneer scientific and clinical advancements; share expertise; foster an academic environment that nurtures healthcare professionals; and champion an accessible, comprehensive and sustainable child health system. SickKids is proud of its vision of Healthier Children. A Better World.™

Labatt Family Heart Centre — The Labatt Family Heart Centre was established in February 2007. The extraordinary generosity of the Labatt Family allowed the former Cardiac Program to move forward with a series of important internal initiatives, funding the redevelopment and future activities of the Heart Centre at SickKids.

VISION — To be the global leader in transformational congenital cardiac care

We will produce measurable unsurpassed outcomes in cardiac clinical care, research and education by:

1. Creating an environment for our people to continuously innovate and create value; 2. Striving for exemplary patient and family satisfaction and staff engagement; 3. Embracing and enhancing our outstanding partnerships at all levels; 4. Championing education and transformative research; and 5. Enabling our work with responsible and responsive operations.


FUTURE DIRECTIONS - Our vision of premier international excellence is based on the four pillars of our mission:

1. Unsurpassed, measurable patient outcomes; 2. Innovative, practice-changing research; and 3. Superb education, training and quality of work life.

Exemplary patient and family satisfaction

The Hospital for Sick Children • 555 University Avenue • Toronto, Ontario, Canada, M5G 1X8
Phone: (416) 813-1500  www.sickkids.ca
GOLD

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SILVER

We provide superior pediatric care in a setting that offers the latest benefits and innovations in medical technology, research and family-friendly design. Lurie Children’s is ranked in the top 10 of the nation’s best children’s hospitals on the US News & World Report 2012-13 Honor Roll list. Our medical staff includes 1189 physicians in 70 pediatric specialties, including organ transplantation, oncology, cardiology, gastroenterology, surgery, and more. We are the largest pediatric provider in the region.

Ann & Robert H. Lurie Children’s Hospital of Chicago • 225 E. Chicago Avenue • Chicago, Illinois 60611
Phone: (312) 227-4000  www.luriechildrens.org

An integral part of the Medical University of South Carolina, the MUSC Children’s Hospital is dedicated to enhancing the health of children throughout South Carolina and to providing an environment that supports excellence in pediatric patient care, teaching and research. Our employees believe that children have special needs for everything from their medicines and the size of their beds to special care that only specially trained pediatric professionals can provide.

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Children's Healthcare of Atlanta • 1405 Clifton Rd NE • Atlanta, GA 30322
Phone: (404) 250-5437 www.choa.org

Since its start in 1855 as the nation's first hospital devoted exclusively to caring for children, The Children's Hospital of Philadelphia has been the birthplace for many dramatic firsts in pediatric medicine. The hospital has fostered medical discoveries and innovations that have improved pediatric healthcare and saved countless children's lives. Over 150 years of innovation and service to our patients, their families and our community, reflect an ongoing commitment to exceptional patient care.

The Children's Hospital of Philadelphia • 34th Street and Civic Center Blvd. • Philadelphia, PA 19104
Phone: (215) 590-1000 www.chop.edu

Children's Mercy Hospitals and Clinics, located in Kansas City, Missouri, is one of the country's premier free-standing independent pediatric medical centers. Our Ward Family Heart Center, ranked among the best in the nation by U.S. News & World Report, provides comprehensive, nurturing care of the highest quality to all patients, from fetus to the adult, with congenital heart disease and acquired pediatric heart disease. We excel in clinical care, education, innovative research and community service.

Children's Mercy Hospitals and Clinics • 2401 Gillham Road • Kansas City, MO 64108
Phone: (816) 234-3000 www.childrensmercy.org
Ikaria, Inc. is a critical care company focused on developing and commercializing innovative therapies designed to address the significant needs of critically ill patients. The company’s lead product is INOMAX® (nitric oxide) for inhalation, the only FDA-approved drug for the treatment of hypoxic respiratory failure associated with pulmonary hypertension in term and near-term infants. It is offered through the INOMAX therapy package, an all-inclusive offering of drug product, drug-delivery system, on-site training and 24/7/365 technical assistance and support. The INOMAX therapy package also is marketed in Puerto Rico, Canada, Australia, Mexico and Japan. The company is investigating additional indications for INOMAX in bronchopulmonary dysplasia and for inhaled nitric oxide with the INOPulse® DS drug-delivery system as a drug-device combination product in pulmonary arterial hypertension (PAH) and pulmonary hypertension secondary to chronic obstructive pulmonary disease (COPD). Ikaria’s pipeline is also comprised of terlipressin, a potential treatment for Hepatorenal Syndrome Type 1, which is currently approved and marketed in Australia as LUCASSIN®; as well as Bioabsorbable Cardiac Matrix (BCM), a potential treatment for preventing cardiac remodeling and subsequent congestive heart failure following acute myocardial infarction. Ikaria is headquartered in Hampton, NJ, with research facilities in North Brunswick, NJ and Madison, WI, and manufacturing facilities in Port Allen, LA and Madison, WI. Please visit www.ikaria.com.

Ikaria, Inc. • Perryville III Corporate Park • 53 Frontage Road, 3rd Floor • PO Box 9001 • Hampton, NJ 08827
Phone: (908) 238-6600  www.ikaria.com

Levine Children’s Hospital leads the region in offering a comprehensive range of specialized pediatric services, including kidney, liver and heart transplants; cardiac and cancer care; neurosurgery; rehabilitation services and the highest designated level of neonatal intensive care.

Levine Children’s Hospital • 1000 Blythe Boulevard • Charlotte, NC 28203
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St. Jude Medical develops medical technology and services that focus on putting more control into the hands of those who treat cardiac, neurological, and chronic pain patients worldwide. For more information, visit sjm.com.

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ELSO • 2800 Plymouth Rd • Building 300, Room 303 • Ann Arbor, MI 48109  
Phone: (734) 998-6601  www.elsonet.org

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The Children’s Hospital of Philadelphia • 34th Street and Civic Center Blvd. • Philadelphia, PA 19104
Phone: (215) 590-1000  www.chop.edu

Children’s Mercy Hospitals and Clinics, located in Kansas City, Missouri, is one of the country’s premier free-standing independent pediatric medical centers. Our Ward Family Heart Center, ranked among the best in the nation by U.S. News & World Report, provides comprehensive, nurturing care of the highest quality to all patients, from fetus to the adult, with congenital heart disease and acquired pediatric heart disease. We excel in clinical care, education, innovative research and community service.

Children’s Mercy Hospitals and Clinics • 2401 Gillham Road • Kansas City, MO 64108
Phone: (816) 234-3000  www.childrensmercy.org
Children's National Medical Center is a private nonprofit pediatric hospital located in Washington, DC and is ranked among the top children’s hospitals in the United States. With more than 120 beds devoted to medical, surgical, neurologic, newborn, and cardiac critical care, we are rapidly growing and expanding our clinical and research faculty. We consistently rank among the top ten children’s hospitals for NIH funding and are the only children’s hospital identified as the principal recipient of an NIH CTSA grant. The Division of Critical Care Medicine is one of seven clinical research sites in the NIH Pediatric Critical Care Research Network.

The new cardiac ICU is a 34,000 sq. foot state-of-the-art 26-bed unit with large private rooms, remote video and vital sign monitoring, novel capabilities for digital integration and graphic display, and a room dedicated to high fidelity simulation. Our multidisciplinary team is dedicated to improving outcomes through innovation and research and expanding the use of novel technologies in physiologic monitoring and neuroprotective treatments. Our physicians are board certified in multiple disciplines and many are national leaders in cardiac critical care and surgery, having won awards for innovative care and clinical research. According to the PHIS database, our adjusted complexity measure for cardiac surgery patients is the highest in country (2009-2011) with outcomes that are among the best in the nation.

Children’s National is recruiting licensed practitioners in programs related to congenital heart disease surgery, mechanical circulatory support, and heart transplantation. Visit www.ChildrensNational.org to learn more.

Children’s National Medical Center • 111 Michigan Avenue Northwest • Washington, DC 20010
Phone: (202) 476-5000  www.childrensnational.org

The Heart Institute at Cincinnati Children’s Hospital Medical Center was formed in 2008 with the mission to transform pediatric heart disease through the integration of clinical care, molecular cardiovascular research and education.

That mission is being realized each day. We are a referral center for patients from across the United States and the world; in 2012, we treated patients from 42 states and 19 countries, treating a total of almost 16,000 patients. The Heart Institute has 54 faculty conducting research, with 189 peer-reviewed publications in 2012.

As one of only 9 Pediatric Heart Network (PHN) core sites in North America, our strong research infrastructure, top investigators and novel research proposals have made us a member of this National Institutes of Health collaboration since 2006.

Cincinnati Children’s is the second-highest recipient of National Institutes of Health grants for pediatric research.

U.S. News & World Report ranked Cincinnati Children’s as one of the nation’s top 3 pediatric hospitals and the Heart Institute is ranked in the top 10 for heart care and heart surgery. But we’re far more than a number or ranking. We are changing the outcome in pediatric heart care for children worldwide.

The Heart Institute at Cincinnati Children’s Hospital Medical Center • 3333 Burnet Ave • Cincinnati, OH 45229
Phone: (513) 636-4432  www.cincinnatichildrens.org

COVIDIEN is a leading global healthcare products company that creates innovative medical solutions for better patient outcomes and delivers value through clinical leadership and excellence. Covidien manufactures, distributes and services a diverse range of industry-leading product lines in three segments: Medical Devices, Pharmaceuticals and Medical Supplies. With 2012 revenue of $11.9 billion, Covidien has 43,000 employees worldwide in 70 countries, and its products are sold in over 140 countries. Please visit www.covidien.com to learn more about our business.

COVIDIEN • 15 Hampshire Street • Mansfield, MA 02048
Phone: (508) 261-8000  www.covidien.com

The Extracorporeal Life Support Organization (ELSO) is an international consortium of health care professionals who are dedicated to the development and evaluation of novel therapies for support of failing organ systems. ELSO maintains an extracorporeal membrane oxygenation registry which is used to support clinical research, regulatory agencies and ELSO centers. ELSO provides educational programs for active centers as well as for the broader medical and lay communities.

ELSO • 2800 Plymouth Rd • Building 300, Room 303 • Ann Arbor, MI 48109
Phone: (734) 998-6601  www.elsonet.org
The Hospital for Sick Children (SickKids) is recognized as one of the world’s foremost pediatric healthcare institutions and is Canada’s leading centre dedicated to advancing children’s health through the integration of patient care, research and education. Founded in 1875 and affiliated with the University of Toronto, SickKids is one of Canada’s most research-intensive hospitals and has generated discoveries that have helped children globally. Its mission is to provide the best in complex and specialized family-centered care; pioneer scientific and clinical advancements; share expertise; foster an academic environment that nurtures healthcare professionals; and champion an accessible, comprehensive and sustainable child health system. SickKids is proud of its vision of Healthier Children. A Better World.™

Labatt Family Heart Centre — The Labatt Family Heart Centre was established in February 2007. The extraordinary generosity of the Labatt Family allowed the former Cardiac Program to move forward with a series of important internal initiatives, funding the redevelopment and future activities of the Heart Centre at SickKids.

VISION — To be the global leader in transformational congenital cardiac care

We will produce measurable unsurpassed outcomes in cardiac clinical care, research and education by:

1. Creating an environment for our people to continuously innovate and create value; 2. Striving for exemplary patient and family satisfaction and staff engagement; 3. Embracing and enhancing our outstanding partnerships at all levels; 4. Championing education and transformative research; and 5. Enabling our work with responsible and responsive operations.


FUTURE DIRECTIONS - Our vision of premier international excellence is based on the four pillars of our mission:

1. Unsurpassed, measurable patient outcomes; 2. Innovative, practice-changing research; and 3. Superb education, training and quality of work life.

Exemplary patient and family satisfaction

The Hospital for Sick Children • 555 University Avenue • Toronto, Ontario, Canada, M5G 1X8
Phone: (416) 813-1500  www.sickkids.ca

Levine Children’s Hospital leads the region in offering a comprehensive range of specialized pediatric services, including kidney, liver and heart transplants; cardiac and cancer care; neurosurgery; rehabilitation services and the highest designated level of neonatal intensive care.

LCH is part of Carolinas HealthCare System, the largest healthcare system in North and South Carolina, the third largest public healthcare system nationally and is located on the campus of Carolinas Medical Center, the flagship facility of Carolinas HealthCare System.

Levine Children’s Hospital • 1000 Blythe Boulevard • Charlotte, NC 28203
Phone: (704) 381-2000  www.levinechildrenshospital.org

Melnic Consulting Group is the leader in Pediatric Nurse Placement. By partnering with top children’s hospitals, primary and specialty care physician groups, and pediatric clinics, Melnic is able to match pediatric nursing candidates with the best cardiac intensive care jobs and advanced practice opportunities available. With over 20 years in the industry, Melnic is your partner and resource for a successful advanced practice placement experience.

If you are currently searching for a pediatric nurse, let us help you. We have over 9500 candidates consisting of Pediatric Nurse Practitioners, Clinical Nurse Specialists, Nurse Leaders, Registered Nurses, and Physician Assistants. Many of our candidates are Acute Care Certified and are highly skilled and experienced in their specialties.

If you are looking for a pediatric nursing career opportunity, Melnic is here to help you. We work with our candidates to improve their resumes, provide career guidance, and help them land the job of their dreams. Contact us today to learn more about our nationwide pediatric nursing career opportunities!

Melnic Consulting Group • Alexandria, VA 22314
Phone: (800) 886-7906  www.melnic.com

Nonin Medical, the inventor of finger pulse oximetry, specializes in the design and manufacturing of noninvasive physiological monitoring solutions. Nonin distributes its pulse and regional oximeters, capnographs, sensors and software to healthcare professionals and consumers in more than 125 countries and has more than 100 OEM partners worldwide.

Nonin Medical, Inc • 13700 1st Avenue North • Plymouth, MN 55441
Phone: (800) 356-8874  www.nonin.com
The Pediatric Cardiac Critical Care Consortium (PC4) aims to improve the quality of care for patients with critical pediatric and congenital cardiovascular disease in North America and abroad. Formed in 2009 with National Institutes of Health funding, PC4 is a unique collaborative of leaders in pediatric cardiac critical care, cardiac surgery, and cardiology representing a diverse group of centers caring for these vulnerable patients. The core pillars of collaborative quality improvement serve as the foundation for PC4: purposeful collection of specific clinical data on outcomes and practice; timely performance feedback to clinicians, and continuous improvement based on empirical analysis and collaborative learning. PC4 will be an international leader in the effort to improve care to critically ill patients with pediatric and congenital heart disease.

St. Jude Medical develops medical technology and services that focus on putting more control into the hands of those who treat cardiac, neurological, and chronic pain patients worldwide. For more information, visit sjm.com.

St. Jude Medical Center • 101 E. Valencia Mesa Dr. • Fullerton, CA 92835
Phone: (714) 871-3280  www.sjm.com

Thoratec is the world leader in mechanical circulatory support with the broadest product portfolio to treat the full range of clinical needs for patients suffering from advanced heart failure. The company's products include the HeartMate LVAS and Thoratec VAD, with more than 20,000 devices implanted in patients suffering from heart failure. Thoratec also manufactures and distributes the CentriMag and PediMag/PediVas product lines. Thoratec is headquartered in Pleasanton, California. For more information, visit www.thoratec.com.

Thoratec • 6035 Stoneridge Drive • Pleasanton, CA 94588
Phone: (925) 847-9600  www.thoratec.com

Transonic’s COstatus® Hemodynamic Monitor is the first technology that allows for routine measurement of cardiac output, blood volumes and the identification of shunts in small critically ill children. Utilizing gold standard ultrasound dilution technology without inserting new catheters allows unlimited use in guiding treatment therapy for PICU and NICU patients.

Transonic • 34 Dutch Mill Road • Ithaca, NY 14850
Phone: (607) 257-5300  www.transonic.com
Optional Postgraduate Physician Course

**PHYSICIAN: AV Canal and the Pathophysiology of End-stage Heart Failure**

Moderators: David S. Cooper, MD, MPH; Joshua Salvin, MD, MPH

1:00 PM  
Expected Outcomes for AVC Repair in 2012  
Jeffrey P. Jacobs, MD, FACS, FACC, FCCP

This presentation analyzes 2882 operations to repair atrioventricular (AV) canal defects in the Society of Thoracic Surgeons Congenital Heart Surgery Database during a recent 4-year analytic window: partial, 623 (21.5%); intermediate, 342 (11.8%); and complete, 1917 (66.3%). Mean age at complete repair (years) was: partial, 6.1; intermediate, 2.9; and complete, 0.6. Median age at complete repair (years) was: partial, 2.6; intermediate, 0.9; and complete, 0.4. Down syndrome was present in 1767 patients (61.1%). From this review, we learned that 98% to 99% of patients survive complete repair of AV canal, and 96% to 97% survive complete repair of AV canal with no major complications.

1:20 PM  
Imaging of AVC and Decision Making  
Rick Michelfelder, MD

Atrioventricular septal defect is a congenital heart defect encompassing a wide spectrum of anatomic findings, many of which can significantly impact surgical and perioperative planning. It is the goal of this presentation to review the noninvasive assessment of anatomy and function in atrioventricular septal defect with a focus on important findings that can impact surgical and medical management. Associated findings and anatomic variants impacting care will also be presented.

1:50 PM  
Post-op Management of AVC  
Sarah Teele, MD

This presentation will take a practical approach towards the management of AVC in the immediate postoperative period. We will review the more common issues that arise in the well-balanced lesion. In addition, we will take a closer look at the interesting pathophysiology frequently present in the postoperative unbalanced AVC. Ideally, this lecture will reinforce the basics and empower the bedside clinician.

2:10 PM  
Reoperation for AVC — Indications and Outcomes  
James William Gaynor, MD

2:40 PM  
Panel Discussion

3:00 PM  
MCS for ESHF — When and Why?  
Ravi R. Thiagarajan, MBBS, MPH

3:30 PM  
Medical Management of ESHF  
Angela Lorts, MD

The presentation will outline the care of a child with severe myocardial dysfunction resulting in a low cardiac output. The topics discussed will include current trends in inotrope management, end organ function monitoring, and when to advance therapy to mechanical support. The lecture should provide some insight into the difficulties of caring for these children when they are end stage and how to maximize their cardiac output while they recover from an acute insult or await organ transplantation.

3:50 PM  
What Therapies Should We Be Stealing from Our Adult Colleagues?  
John Lynn Jefferies, MD, MPH, FAAP, FACC

4:10 PM  
Timing of OHT and How to Optimize Its Success  
Clifford Chin, MD

This presentation will cover the evaluation and management of the end stage patient in need of transplant consideration. Specific focus will be on when and why a patient should be listed or not listed.

4:40 PM  
Panel Discussion
### Optional Postgraduate Nursing Course  
**Salon 1**

**NURSING: Single Ventricle Physiology**  
Moderators: Sandra Staveski, CCRN, CNS, CPNP-PC/AC, MS, RN; Dorothy M. Beke, RN, MSN, CPNP-PC/AC

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<th>Time</th>
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| 1:00PM | **Prenatal Decision Making**  
  Terra Lafranchi, RN, MSN, NP-C; Patricia Lincoln, RN, MS, CNS-BC, CCRN  
  This presentation will discuss the evaluation process, family counseling and decision making related to prenatal diagnosis of single ventricle heart disease. All families with a fetal diagnosis are provided the opportunity to tour the CICU. Results from a qualitative study involving prenatal CICU tours, the impact of the experience, and the unique educational needs of these families will be presented. |
| 1:20PM | **Fetal Intervention for Single Ventricle Physiology**  
  Terra Lafranchi, RN, MSN, NP-C  
  This presentation will focus on fetal cardiac intervention including aortic valve dilation for aortic stenosis and evolving hypoplastic left heart syndrome. Evaluation, education, procedure, risks, and process of care will be reviewed. Current research and outcomes data from the past decade will be discussed. |
| 1:40PM | **Preoperative Stabilization for Stage I Palliation**  
  Amy Donnellan, PNP-AC  
  The presentation will discuss the preoperative stabilization for stage I palliation. The lecture will discuss the perinatal events and delineate the anatomic and physiologic findings of the cardiac defects. Evaluate the factors that determine the timing of surgical intervention. Discuss measures to balance systemic and pulmonary blood flow to promote optimal tissue perfusion. These measures include hemodynamic monitoring, prostaglandin infusion, respiratory support, and fluid management. The lecture should assist the audience in the management of preoperative univentricular patients in the cardiac intensive care unit. |
| 2:00PM | **Hybrid Procedure: What, When, and Why?**  
  Stephen F. Kaine, MD, FAAP, FACC, FSCAI  
  This presentation will focus on 2 surgical procedures, the Norwood Procedure with a modified Blalock-Taussig Shunt and the Norwood Procedure with a right ventricular to pulmonary artery (RV-PA) conduit, for initial palliation for hypoplastic left heart syndrome. Indications, timing, surgical technique, and postoperative management strategies for each intervention will be compared. Outcomes data and significant research findings for these surgical procedures will be reviewed. |
| 2:20PM | **RV-PA Conduit vs Modified BTS for Stage I Palliation**  
  Dorothy M. Beke, RN, MSN, CPNP-PC/AC  
  This presentation will focus on 2 surgical procedures, the Norwood Procedure with a modified Blalock-Taussig Shunt and the Norwood Procedure with a right ventricular to pulmonary artery (RV-PA) conduit, for initial palliation for hypoplastic left heart syndrome. Indications, timing, surgical technique, and postoperative management strategies for each intervention will be compared. Outcomes data and significant research findings for these surgical procedures will be reviewed. |
| 2:40PM | **Interstage Monitoring**  
  JoAnn Nieves, MSN, PNP-BC, ARNP, FAHA  
  Newborns with single ventricle palliations are at risk for significant morbidity and mortality during the “interstage period” which is the time between the discharge home and a second stage surgical intervention. Risk factors will be reviewed. Use of home surveillance monitoring has been shown to improve survival and growth in this highly vulnerable, fragile population. Tools for optimizing family preparation for home care, methods used to monitor interstage, nutrition, mobile technology, developmental needs, immunization care, and critical communications to the medical home, will be reviewed. The ongoing, multicenter work of the National Pediatric Cardiology Quality Improvement Collaborative will be shared. |
| 3:00PM | **Questions** |

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*The Pediatric Cardiac Intensive Care Society  
9** International Conference  
December 9-12, 2012 • Loews Miami Beach Hotel • Miami Beach, Florida, USA*
3:15PM  Bidirectional Glenn Palliation  
Cecilia St. George-Hyslop, BScN RN, MEd, CNCCP(C)  
The Bidirectional Glenn Stage II procedure is used to palliate single ventricle physiology following Stage 1 Repair (Norwood, Sano, Hybrid). This session will review complexities of Stage II Bidirectional Glenn/Hemi-Fontan operations. Preoperative data favoring Bidirectional Glenn procedure will be considered and strategies for postoperative management (early extubation, head elevation, reduction of pulmonary edema) will be discussed. Postoperative complications (elevated PVR, venovenous collaterals, low pulmonary venous saturations and obstructions to SVC-PA connections) will be discussed. Factors presenting risk for final Fontan repair (high PA pressures and left ventricle end diastolic pressures, valvular regurgitation, and distortion in the pulmonary artery anatomy) will be noted.

3:35PM  Fontan Procedure  
Melissa Jones, MSN, CPNP-AC  
This presentation will focus on the management of patients on the single ventricle pathway after the Fontan procedure. It will review the pertinent pieces of preoperative data that may help to inform the postoperative course and management. The major concepts of Fontan physiology will be discussed as they relate to the expected postoperative course. Additionally, common postoperative complications and management strategies will be examined.

3:55PM  Biventricular Repair for the Marginal SV Patient  
Megan Tracey, RN, MS, PNP-BC, CNS  
This presentation will focus on important anatomical issues when deciding on biventricular repair in the marginal single ventricle patient. We will review the surgical repairs and the important postoperative issues as well as long-term issues for this challenging patient population.

4:15PM  Protein-losing Enteropathy and Plastic Bronchitis  
Christine Peyton, MS, CCRN, CPNP-AC  
Protein-losing enteropathy and plastic bronchitis are 2 rare complications after Fontan palliation for single ventricle physiology. Protein-losing enteropathy is characterized by abnormal enteric protein loss and is considered a rare gastrointestinal complication following Fontan palliation. Plastic bronchitis is a condition where bronchial casts develop in the tracheobronchial tree and cause airway obstruction. This lecture will provide an overview of clinical presentation, nursing considerations, and treatment related to these 2 complications. The information provided in this lecture will promote clinical judgment in caring for patients who are experiencing either of these complications following the Fontan procedure.

4:35PM  Sending the Single Ventricle Patient Home on a VAD While Awaiting Heart Transplant  
Megan del Corral, RN, BSN, CCRN  
Worldwide experience with ventricular assist device (VAD) support in patients with univentricular physiology has been very limited. The topic to be discussed is the successful application of an intracorporeal systemic ventricular assist device (SVAD), the HeartMate II, and the SynCardia Total Artificial Heart (t-TAH) in an adolescent with failing Fontan circulation and protein-losing enteropathy (PLE). Also to be discussed is the infrastructure and flow needed to create a successful discharge plan and outpatient clinic for patients who are mechanically supported.

4:55PM  The Pregnant Failing Fontan in the Pediatric CICU  
Louise Callow, RN, MSN, CPNP  
Improved outcomes of the Fontan operation have resulted in increased survival to adulthood. For women, the impact of pregnancy and delivery on the fetus and mother pose a major concern. Single ventricular physiology results in limited ability to increase cardiac output. Coupled with the increased physiologic demands on the maternal circulatory system throughout pregnancy and delivery, these women are at risk for acute cardiovascular decompensation. Optimal care requires an understanding of the management of single ventricular physiology, the cardiovascular demands of pregnancy, management of labor and delivery, and the postpartum care of women with marginal single ventricular function.

5:15PM  Questions
Commencement of the 9th International PCICS Conference

5:00PM

Plenary: CICU in the 22nd Century
Salon 3

Moderators: Paul A. Checchia, MD, FAAP, FCCM, FACC; Steven Schwartz, MD, MS, FRCPC

5:30PM Welcome and Introduction
Paul A. Checchia, MD, FAAP, FCCM, FACC

5:45PM The Future of Monitoring Data Management: Real-time Risk Management and Data Integration
Peter C. Laussen, MBBS, FCICM

6:20PM A Future for Critical Care: Reanimation and Health Engineering
J. Perren Cobb, MD

Those who care for the critically ill and injured rightfully celebrate the advances made by our field over its first 50 years. In the 21st century, breakthroughs in systems, tissue, and molecular engineering will provide unprecedented opportunities to treat critical illness and injury by engineering health. Thus, as we spent the first 50 years of care for the critically ill and injured learning how best to hook humans up to machines, we will spend the next 50 years learning how to better liberate patients from mechanical support towards the goal of full reanimation. Several examples from our experience will be described, including early rehabilitation, advanced decision support, novel sepsis diagnostics and therapeutics, and bio-artificial organs. Our future should be aimed in part at refining our skill sets and refocusing (even rebranding) critical care as reanimation and health engineering.

6:55PM Advanced Inpatient Clinical Intelligence Systems beyond the EMR
Richard Bakalar, MD

Today’s inpatient electronic health records are designed and optimized to capture and retrieve transactional healthcare data for individual patients. The rapid pace and complexity of modern medical decision making demands greater clinical intelligence and predictive modeling at the point of care in near real-time. During this presentation, we will explore the design challenges of existing healthcare information systems; the key characteristics of emerging enhanced capabilities; and real world examples of innovation which leverage and reuse electronic medical record data. The positive impact on clinical quality outcomes and cost avoidance is compelling and driving adoption on a global scale.

7:30PM Questions

Welcome Reception
Americana Lawn

8:00PM
### Plenary: What Impacts Long-term Outcomes?

**Moderators:** Bradley S. Marino, MD, MPP, MSCE; Peter J. Gruber, MD, PhD

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<th>Time</th>
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<th>Speaker</th>
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<tr>
<td>8:00 AM</td>
<td>What Impacts Long-term Myocardial Outcomes?</td>
<td>Joseph Rossano, MD, MS, FACC, FAAP</td>
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<td>8:15 AM</td>
<td>What Impacts Long-term Neurodevelopmental Outcomes?</td>
<td>Nancy Ghanayem, MD</td>
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<td>8:30 AM</td>
<td>What Impacts Long-term Renal Outcomes?</td>
<td>Stuart Goldstein, MD, FAAP</td>
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<td>Acute kidney injury (AKI) occurs frequently in children with critical illness and after cardiopulmonary bypass (CPB). The long-term effects of post-CPB AKI on kidney function has not been studied systematically until recently. In this presentation, pediatric and relevant adult long-term follow up of critically ill children who develop AKI and post-CPB patients will be reviewed. In addition, recent work evaluating the role of novel urinary biomarkers to detect subclinical chronic kidney injury in children after CPB will be presented.</td>
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<td>8:45 AM</td>
<td>How Does the Utilization of ECMO/VAD Impact Long-term Outcomes?</td>
<td>John M. Costello, MD, MPH</td>
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<td>The use of extracorporeal membrane oxygenation and ventricular assist devices in pediatric cardiac patients is increasing. Acute complication and hospital survival rates for this patient population have been widely reported. This presentation will focus on emerging data regarding long term outcomes and quality of life for children who previously received mechanical cardiac support.</td>
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<td>9:00 AM</td>
<td>What Impacts Long-term QoL Outcomes?</td>
<td>Bradley S. Marino, MD, MPP, MSCE</td>
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<td>9:15 AM</td>
<td>What is Impacting Long-term Outcomes that We Aren’t Aware of?</td>
<td>Gil Wernovsky, MD, FACC, FAAP</td>
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<td>In the past decade, there has been growing recognition of adverse neurodevelopmental outcomes in children with complex CHD; research shows an expanding list of modifiable and nonmodifiable risk factors. The impact on the brain from complex CHD begins in fetal life, continues through the inpatient stay including, surgery, anesthesia and postoperative care, and importantly, continues after discharge to home. In this review, I will review these factors, with an emphasis on perioperative care and discharge planning.</td>
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### Anthony Chang Lecture

**Moderator:** Paul A. Checchia, MD, FAAP, FCCM, FACC

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<td>10:00 AM</td>
<td>ECMO Life Support in Pediatric Heart Failure</td>
<td>Robert H. Bartlett, MD</td>
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<td>Extracorporeal membrane oxygenation (ECMO) is the use of a modified heart-lung machine for prolonged life support in severe acute heart or lung failure. In pediatric patients, ECMO is used as a bridge to recovery or to heart replacement with a VAD or transplant. This lecture will describe the history, current status, and future of ECMO technology in pediatric heart failure.</td>
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### Oral Research Presentations

**Moderators:** Paul A. Checchia, MD, FAAP, FCCM, FACC; Ravi R. Thiagarajan, MBBS, MPH; Nikoleta Kolovos, MD, FAAP

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<td>11:00 AM</td>
<td>Lunch/PCICS Business Meeting</td>
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Concurrent Breakout Sessions

PHYSICIANS: Transfusions and Blood Products
Salon 2

Moderators: Ronald A. Bronicki, MD; Joshua Salvin, MD, MPH

1:00 PM  Physiologic Aspects of Anemia in the Critically Ill Child with Congenital Heart Disease
         Stephen Roth, MD, MPH

1:20 PM  Clinical Benefits and Consequences of Transfusion
         Joshua Salvin, MD, MPH

1:40 PM  Anesthetic and Intra-operative Considerations for Red-cell Utilization
         Francis X. McGowan, Jr, MD, FAAP

This presentation will review our current understanding about the indications for autologous red blood cell transfusion overall and particularly during the perioperative period in patients with congenital heart disease, as well as the limitations to this information. In addition, it will specifically focus upon increasing evidence regarding the physiological limitations and adverse consequences of RBC administration. At the end of this discussion, attendees will be better able to define the benefits and risks of RBC transfusion in the congenital heart disease population as well as discuss some potential strategies to reduce the need for RBCs in these patients.

2:00 PM  Blood Conservation Strategies and Postoperative Bleeding
         Tia Raymond, MD, FAAP

The presentation will discuss the indications and risks of blood transfusions in pediatric cardiac surgery patients, blood conservation strategies, and postoperative bleeding. Patient blood management and the 3 pillars of blood conservation will be outlined: 1. optimize patient preoperatively; 2. minimize blood loss during surgery; and 3. maximize and conserve blood production after surgery. Strategies discussed will include methods to decrease cardiopulmonary bypass prime, vacuum-assisted venous drainage, cell salvage, and point-of-care testing to include the use of the thromboelastogram.

2:20 PM  Debate: What is the Optimal Hematocrit in the CICU - 30 vs 45
         Joshua Salvin, MD, MPH

2:40 PM  Panel Discussion

SPECIALTY: What Would Happen if...?
Salon 3

Moderators: Paul A. Checchia, MD, FAAP, FCCM, FACC; Darren Klugman, MD

1:00 PM  What Would Happen if I Was Given a Surprise Topic?
         Gil Wernovsky, MD, FACC, FAAP

Shhhhhhh... It’s a surprise!!!!

1:15 PM  What Would Happen if I Never Used Lasix Again?
         Timothy Hoffman, MD, FACC, FAHA

This presentation will focus on the physiology of postoperative patients and those with altered cardiac function who have fluid overload or elevated filling pressures in the setting of not being able to use diuretics. Furthermore, other modalities, as alternatives to diuretics to influence fluid management, such as fenoldopam and ultrafiltration, will be discussed.

1:30 PM  What Would Happen if Fellows Were Given Control of the Podium?
         Pirouz Shamszad, MD

1:45 PM  What Would Happen if I Only Had One Mode of Ventilation to Use and One Vasoactive Med?
         Lara Shekerdemian, MD, MB BCh, FAAP, FCICM, FRCPCH

2:00 PM  What Would Happen if I Only Had One Lab Draw Per Day?
         Erica Molitor-Kirsch, MD
2:15PM  What Would Happen if I Lost the Ability to Bill for Critical Care Time?  
Howard Jeffries, MD, MPH, MBA  
This lecture will review the current state of critical care billing with particular consideration of the impact of the global surgical fee. The interconnectivity of institutional and professional services charges across multidisciplinary services will also be discussed with emphasis on the justification for distinct critical care services and associated compensation.

2:30PM  What Would Happen if I Never Fed Any Patients?  
Mary E. McBride, MD  
This presentation will cover catabolism and metabolism in general as well as focus on critically ill children particularly those with cardiac disease. Strategies to safely and appropriately meet the demands of our patient population including feeding protocols will also be covered. The benefits of nil per os status, including prevention of necrotizing enterocolitis, will be compared to the risks of parenteral nutrition as well as enteral feedings.

2:45PM  What Would Happen if Attendings Had Work Hour Guidelines?  
Nancy Ghanayem, MD  

3:00PM  What Would Happen if I Didn’t Have a Surgeon?  
Timothy F. Feltes, MD, FACC, FAHA  

3:15PM  What Would Happen if I Didn’t Have a Nurse?  
Anthony F. Rossi, MD  
Nursing is a critical component in developing a congenital heart program. The current presentation documents the critical role nursing plays in the management of infants and children with critical heart disease.

NURSING: Critically Ill Pre-term/SGA Infant with CHD  
Salon 1  
Moderators: Sandra Staveski, CCRN, CNS, CPNP-PC/AC, MS, RN; Dorothy M. Beke, RN, MSN, CPNP-PC/AC; Nancy Braudis, RN, MS, CPNP  

1:00PM  Palliation vs Full Repair for the Critically Ill Pre-term Infant: Timing of Intervention and Impact on Outcomes  
Christine Peyton, MS, CCRN, CPNP-AC  
Critically ill pre-term and/or small for gestational age neonates may require surgical intervention for complex congenital cardiac lesions. Surgical intervention can be an increased risk factor for morbidity and mortality in this population. Outcomes for neonatal cardiac surgical repair have improved over the past 10 years, but the debate to proceed with full repair vs palliation remains a hot topic. This lecture will review the literature related to timing of surgical intervention and outcomes for full surgical repair vs palliative repair for the pre-term or small for gestational age newborn.

1:20PM  Postoperative Management  
Dawn Tucker, RN, MSN, CPNP-PC/AC, CPNP-AC  

1:40PM  Issues Related to Nutrition, Fluid, and Electrolytes  
Linda Lambert, MSN, FNP  

2:00PM  Developmental Care and the Environment  
Lisa Kohr, RN, MPH, MSN, CPNP-PC/AC  
SGA and premature infants with congenital heart disease remain the highest risk group for mortality and morbidity. Achieving early physiologic stability is linked with improved neurodevelopmental outcomes. However, physiologic stability is threatened by the pediatric cardiac intensive care unit (PCICU) environment where the neonate is exposed to near constant visual, auditory, and tactile stimuli. This session will review data regarding developmental care and its impact on patient outcomes. Neonatal studies on chronic light and noise exposure as well as developmentally supportive positioning will be reviewed including the link to adverse changes in physiologic parameters, stress hormone production, and sleep disturbance.
MONDAY DECEMBER 10TH (CONTINUED)

2:20PM  **Ethical Issues Related to Genetic Syndromes and How Small is Too Small?**  
Roxanne Kirsch, MD, FRCP, FAAP  
The presentation will review the ethical challenges faced at the bedside by healthcare providers for children with genetic syndromes and small size. The ethical implications of increased morbidity and mortality risks, the principles employed to achieve a family-centered care plan, and the principles utilized. Case examples will be used to facilitate bringing ethical concerns to light.

2:40PM  **Questions**

**Break**  
3:00PM

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**Concurrent Breakout Sessions**

**PHYSICIAN: Worldwide Perspective of CICU**  
Salon 2

Moderators: Paul A. Checchia, MD, FAAP, FCCM, FACC; Steven Schwartz, MD, MS, FRCP

3:30PM  **International Children’s HeartLink**  
Carrie Ellis  
Children’s HeartLink works in partnership with healthcare centers in underserved regions of the world to promote sustainable cardiac care for children. In helping our partners develop high quality pediatric cardiac programs, we’ve observed several key success factors—many of which require pediatric cardiac critical care leadership. In this presentation, we’ll share our lessons learned from decades of experience in multiple countries and specifically identify how CICU changes at 2 of our partner sites, West China Hospital #1 of Sichuan University in Chengdu, China, and Amrita Institute of Medical Sciences in Kochi, India, had a dramatic impact on the overall pediatric cardiac programs at those centers.

3:45PM  **Pediatric Cardiac Intensive Care in India: Challenges, Strategies, and Rewards**  
Parvathi Iyer, MD, MBBS  
Pediatric cardiac intensive care (PCIC) is perceived to be synonymous with the management of complex staged surgeries like HLHS, efficient ECLS, and expedient ECPR and therefore an esoteric and expensive specialty is unaffordable in emerging economies. In India, late presentation is common. Infants present with systemic or biventricular dysfunction, severe pulmonary hypertension, or circulatory collapse. Comorbidities include malnutrition, respiratory infections, and pre-existing bacterial or fungal sepsis. Perennial nursing and medical manpower shortage make PCIC even more challenging.

Our strategies focus on simple, inexpensive, evidence-based, or homegrown innovations. Manpower training emphasizes rapid skill acquisition and ability to work with dogged determination in an atmosphere of scarcity and stringent budgeting. Our rewards are tremendous and include our sustained extraordinary outcomes.

4:00PM  **A Personal Experience: Setting Up an Entire Heart Hospital in Vietnam**  
Dan Penny, MD, PhD, MHA

4:15PM  **Panel Discussion**

4:30PM  **NICU/Delivery Room/Fetal Intervention**  
Mark Scheurer, MD

4:45PM  **Emergency Department**  
Melissa J. Parker, MD, MS, FRCP, FAAP  
This presentation will review, from the perspective of the emergency physician, challenges encountered when dealing with critically ill children with cardiac problems. Typical issues arising in the emergency department setting and how the pediatric intensivist can assist the emergency physician in the provision of optimal patient care will be discussed. Input from the audience will be encouraged.
5:00PM Transports
Vamsi V. Yarlagadda, MD
The transport of critically ill children is a complex and specialized necessity for a tertiary care center. Cardiac disease represents an important and especially difficult subset of patients requiring transport delivery. If not for a skilled and experienced transport team, there would be a large number of patients with demise prior to ever reaching appropriate medical care. This session serves to discuss the methods used to maintain quality transport ability for tertiary care centers. We will discuss some of the methods specifically employed by the Boston Children’s Pediatric Transport Team and associated cardiac intensive care unit.

5:15PM Panel Discussion

SPECIALTY: Basic Science with Cocktails
Moderators: Bradley S. Marino, MD, MPP, MSCE; Peter J. Gruber, MD, PhD

3:30PM Basic Science: Why Should We Be Interested?
Jeffrey Robbins, PhD
The silos that exist between clinical medical practice and basic research are real. The pediatric intensivist is often struggling with multiple, acute issues that the patient is experiencing in real time using medications and treatments that have been developed outside of their own discipline in the absence of any intensivist input. This discussion will be devoted to exploring new conceptual and operational models that break down these silos as well as novel discoveries at the bench that will inevitably impact acute care in the CVICU.

4:00PM Basic Science of Critical Cardiac Disease
Scott Baldwin, MD

4:30PM What the NIH Wants
Jonathan Kaltman, MD
This presentation will provide an overview of the research activities of the National Heart, Lung, and Blood Institute that focus on pediatric cardiovascular disease. The Pediatric Heart Network, the Pediatric Cardiac Genomics Consortium, and other initiatives will be discussed. The lecture will also review various funding opportunities to support investigator-initiated research with particular focus on specific opportunities for young investigators.

5:00PM Discussion: Synthesizing Bench - Bedside - Bench
Peter J. Gruber, MD, PhD
This presentation will synthesize the presentations from faculty in the session describing the scientific landscape and opportunities for advances.

NURSING: Pro-con Debate
Moderators: Dawn Tucker, RN, MSN, CPNP-PC/AC, CPNP-AC; Louise Callow, RN, MSN, CPNP

3:30PM Palliative Care: Should it be Instituted for Every Patient with HLHS from Time of Diagnosis?
Dorothy M. Beke, RN, MSN, CPNP-PC/AC; Peter Laussen, MBBS, FCICM
Although many advances have been made for the treatment of patients with HLHS, the associated mortality and morbidity remains high when compared with other congenital heart lesions. Patients require life-long follow-up and interventions often associated with prolonged hospital course and monitoring. This presentation will explore the risks and benefits of initiating palliative care for every patient with HLHS from time of diagnosis as part of routine care and management. Within the context of a debate, each speaker will present either the pro or con side of the issues related to early institution of palliative care for patients with HLHS.
3:50 PM  The Focus of the International Cardiac Mission: Train the Trainer vs Go in & Fix It -- Does it Matter?
Sandra Staveski, CCRN, CNS, CPNP-PC/AC, MS, RN; Gabe Eston Owens, MD, PhD
This presentation will concentrate on the merits of designing cardiac mission trips that aim to train the medical providers in the host country versus the approach where the mission team performs most of the clinical services within the infrastructure of the host hospital.

4:10 PM  Hiring New Grads vs Experienced Nurses in the CICU: What's Better for Nurse Retention and Job Satisfaction?
Patricia Hickey, PhD, RN, MBA, CPHQ, NEA-BC; Martha A.Q. Curley, RN, PhD, FAAN
This debate will argue whether hiring new nurse graduates or experienced nurses in the CICU is better for nurse retention and job satisfaction. Dr. Curley will argue the new graduate position and Dr. Hickey will argue the experienced nurse position. The debate will provide the audience with a comprehensive understanding of issues from a short-term and long-term programmatic perspective.

4:30 PM  Do You Believe in NIRS?
Jacklyn M. Faulseit, RN, BSN; Gail Wright, MD
This session will provide a lively and informative discussion on the use of NIRS in the care of infants with congenital heart disease. Studies in support of the use of NIRS will be countered by studies revealing the lack of evidence for its application. It will be up to the audience to decide which speaker presents the most convincing data.

4:50 PM  Fast-track Extubation in the OR vs the CICU: What's Really Best for the Patient?
Patricia Lincoln, RN, MS, CNS-BC, CCRN; Rick Levy, MD
To fast track a patient for extubation may mean removal of the endotracheal tube in the operating room, 6 to 8 hours after surgery in the CICU, or as late as 24 hours postoperatively. Timing is only one variation among providers; there are multiple other factors which may affect the success of this decision. The risks and benefits of early vs immediate extubation will be explored during this presentation. Within the context of a debate, each speaker will present either the pro or con position of the decision of when to extubate the pediatric cardiac surgery patient.

5:10 PM  Panel Discussion
Special Session

Moderators: Mitchell Cohen, MD, FACC, FHRS; Dominic Abrams, MBBS, MD, MRCP

**8:00 AM**  
**Electrophysiology: Troubleshooting**  
Mitchell Cohen, MD, FACC, FHRS

This presentation will deal with case presentations of common and somewhat uncommon clinical arrhythmias in the CICU. Individuals may be called upon to evaluate and provide recommendations as to management strategies in a Socratic manner. The audience at the end of this tutorial should be able to distinguish between certain types of orthodromic and automatic arrhythmias and have a clear understanding of both how to diagnose the disorder and to provide a reasonable treatment plan.

Plenary: Preventable Deaths

Moderators: John M. Costello, MD, MPH; Darren Klugman, MD

**9:00 AM**  
**Complications after Cardiac Surgery: Lessons from the STS Database**  
Sara Pasquali, MD, MHS, FAAP

This presentation will summarize information from several STS Database studies regarding complications after cardiac surgery and introduce a recently studied quality metric called “failure to rescue” in the pediatric cardiac population.

**9:15 AM**  
**Achieving Excellent Outcomes: At the End of the Day, It’s the Bedside Nurse**  
Patricia Hickey, PhD, RN, MBA, CPHQ, NEA-BC

This presentation will discuss the impact of nursing and organizational characteristics on risk-adjusted pediatric cardiac surgical outcomes across 38 children’s hospitals. Among 20,407 cases, in-hospital mortality was 2.7% for the years 2009-2010. The odds of death increased as the institutional percentage of PICU nurses with <2 years clinical experience increased (OR=1.12 for each 10% increase, P<0.001) and in ICUs with dedicated unit educators (OR=1.63, P<0.001). The odds decreased as the institutional percentage of nurses with >16 years of experience increased (OR=0.82, P=0.006) and for hospitals participating in national quality metric benchmarking (OR=0.61, P<0.001). These are first-time findings in pediatric nursing.

**9:30 AM**  
**Quality and Performance Rounds in the CICU: A Better Way to Raise the Bar**  
Edward J. Hickey, MD

The presentation will discuss the interplay between errors, warning signs, and complications. Traditionally, initiatives to monitor and improve clinical performance have generally focused upon morbidity and mortality sessions, where complications and deaths are reviewed. However, by reviewing ALL patients (even complication-free), errors and warning signs may be identified which can drive improvements in performance. In addition, a more introspective and self-critical approach to patient care may improve transparency and paradoxically reduce the blame culture.

**9:45 AM**  
**Pediatric Cardiac Care Consortium: The Future of Multicenter CICU Quality and Outcomes Collaboration**  
Michael Gaies, MD, MPH

The presentation will discuss the past, present, and future of the Pediatric Cardiac Critical Care Consortium (PC4). We will discuss the vision/mission of PC4 which focuses on quality improvement in the CICU, collaborative research among CICUs, and dissemination of evidenced-based practice to the CICU community. The audience should have a clear understanding of opportunities to get involved in the Consortium and how the work of PC4 could impact CICU practice in the near future.

**10:00 AM**  
**How Will I Apply These Initiatives in my CICU?**  
Stephen Roth, MD, MPH

**10:20 AM**  
**These Initiatives Are Trendy, but Won’t Last: What I Really Think is Truly Important**  
David Wessel, MD

**10:40 AM**  
**Questions**
TUesdaY deCember 11Th (CONTINUed)

**Break**
11:00AM

**President/PCICS Awards**
Moderator: Duncan Macrae, MB
11:15AM–11:30AM

**Lunch**
11:30AM–1:00PM

**Concurrent Breakout Sessions**

**PHYSICIan: adult Patients**
Moderators: Ali Dodge-Khatami, MD, PhD

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<tr>
<th>Time</th>
<th>Session</th>
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<tr>
<td>1:00PM</td>
<td><strong>Pregnancy and Congenital Heart Disease</strong></td>
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<td>Frank Cetta, MD, FACC, FASE</td>
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<td>This presentation will review the normal physiologic changes of pregnancy and how they impact women with CHD. Pregnancy outcome data, pregnancy management in women with CHD, and contraindications to pregnancy will be discussed. An update on controversies in the management of anticoagulation during pregnancy will be included. The audience will gain a better understanding of the risks of pregnancy in women with CHD.</td>
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<td>1:15PM</td>
<td><strong>Anesthetic Management of the ACHD Patient Undergoing Cardiac (or Noncardiac) Surgery</strong></td>
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<td>Roxann Pike, MD</td>
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<td>The lecture will focus on intraoperative strategies to improve safety and outcomes for patients with adult congenital heart disease having surgery.</td>
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<td>1:30PM</td>
<td><strong>Management Strategies in the ICU for the Post-op ACHD Patient</strong></td>
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<td>Sheri Crow, MD, MS</td>
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<td>The presentation will deal with the critical care management of the adult patient with congenital heart disease. Specific topics covered will include: 1. critical components of the adult congenital cardiac postoperative care team; 2. identifying adult patients with congenital heart disease who are at the highest risk for mortality following surgery; and 3. postoperative challenges unique to the adult patient with congenital heart disease.</td>
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<td>1:45PM</td>
<td><strong>Postoperative Surgical and Medical Complications</strong></td>
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<td>Anitha John, MD, PhD</td>
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<td>This presentation will address medical and surgical postoperative complications seen in adult patients with congenital heart disease with a focus on: 1. preoperative screening; 2. recognition of complications; and 3. management and treatment. Adults with congenital heart disease are susceptible to adult onset diseases like the general population. It is important to appropriately screen patients prior to surgery to anticipate potential complications and to quickly institute treatments if needed. This lecture should help the audience become familiar with some common issues patients with ACHD face postoperatively in addition to some treatment strategies.</td>
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2:00PM  Approaches to Reoperation in the ACHD Patient  
Joseph Dearani, MD  
Advances in treatment of congenital heart disease (CHD) have resulted in most patients surviving to adulthood. Despite surgical "correction", the need for reoperation(s) persists, and there are few outcome data. Data from the most recent median sternotomy of 984 adults (49% male) with CHD were analyzed. Mean age at operation was 36.4 years. Overall, early mortality was 3.6%. Cardiac injury occurred in 6%. Independent predictors of cardiac injury were single-ventricle diagnosis and increased number of prior sternotomies. Increased time from previous sternotomy decreased the incidence of cardiac injury. Independent risk factors for early death were urgent operation, single-ventricle diagnosis, and longer bypass time. Increased preoperative ejection fraction decreased early mortality. Subsequent sternotomy showed increased early mortality yet neither sternotomy number nor cardiac injury was an independent predictor of early death. Two variables were protective: early mortality was reduced with increased ejection fraction, and cardiac injury was less likely with increased interval from the previous sternotomy.

2:15PM  Arrhythmia Surgery in Adult Patients with CHD  
Constantine Mavroudis, MD  
Arrhythmia surgery in association with congenital heart repairs offers both anatomic correction and resolution of atrial and ventricular arrhythmias which are a significant source of long-term morbidity and mortality. In particular, adult patients who have had remote repairs during childhood are subject to arrhythmias which impact negatively on ventricular function and are hazardous for sudden death. Patients with repaired tetralogy of Fallot (pulmonary regurgitation and atrial arrhythmias), complete atrioventricular canal (residual left AV valve regurgitation and atrial fibrillation), left ventricular outflow tract obstruction (valve stenosis and ventricular arrhythmias), and atrial septal defects (repaired or unrepaired with or without atrial arrhythmias) have residual anatomic lesions as well as potential arrhythmias. These patients could benefit from concomitant therapeutic or prophylactic arrhythmia surgery. This presentation will discuss the issues of arrhythmia surgery in association with congenital heart repairs in adulthood.

2:30PM  Panel Discussion  

SPECIALTY: Biomarkers  
Salon 3  
Moderator: David S. Cooper, MD, MPH  

1:00PM  Heart Failure  
Kevin Maher, MD  
The presentation will review biomarkers used to aid in the management of heart failure in children. A focus on the natriuretic peptides will be maintained as this class of biomarkers has the largest experience in both the adult and pediatric populations. Where and how biomarkers can be used in the management of children with heart failure will be discussed.

1:20PM  AKI  
David S. Cooper, MD, MPH  
Acute kidney injury (AKI) is a common complication of cardiopulmonary bypass and significantly increases the risk of mortality. The treatment of AKI has traditionally consisted of supportive care or renal replacement therapy. Despite such interventions, mortality rates in AKI remain very high. A major reason for this failure has been the lack of early biomarkers for AKI resulting in an unacceptable delay in initiating therapy. The use of biomarkers to determine at-risk patients would allow earlier interventions to prevent AKI, direct earlier AKI supportive care, and predict early AKI to chronic kidney disease progression in critically ill children.

1:40PM  Fontan  
Bradley S. Marino, MD, MPP, MSCE  
The presentation will deal with the pathophysiologic background of inflammation and the role of biomarkers in inflammation and infection. The lecture should help the audience to decide about the role of biomarkers in the clinical care of the pediatric cardiac patient.
2:20 PM  Brain
Blaine Easley, MD, FAAP
The presentation will deal with the rationale and development of biochemical markers of brain injury. This will include: 1) potential serum biomarkers of brain injury; 2) studies of brain biomarkers in heart surgery; and 3) future directions. The lecture should help the audience to understand the current state of brain biomarker research and understand the potential application and limitations in the perioperative care of patients undergoing heart surgery.

2:40 PM  Panel Discussion

NURSING: Cardiopulmonary Interactions  Salon 1
Moderators: Lisa Kohr, RN, MPH, MSN, CPNP-PC/AC; Patricia Lincoln, RN, MS, CNS-BC, CCN

1:00 PM  Airway Pressure Release Ventilation (APRV) for Ventilatory Management in the Pediatric CICU
Elizabeth Price
APRV is a mode of ventilation which provides continuous positive airway pressure with intermittent release. This mode of ventilation has potential advantages over conventional ventilation, and recent studies have demonstrated that APRV may result in earlier extubation, improved hemodynamics, and decreased sedative requirements. This presentation will cover the mechanics of APRV, review recent studies, and explore specific patient management dilemmas.

1:15 PM  ETCO2 in the Cardiac Patient
Dawn Tucker, RN, MSN, CPNP-PC/AC, CPNP-AC

1:30 PM  Mechanical Ventilation Strategies for Left Heart vs Right Heart Failure
Louise Callow, RN, MSN, CPNP
The effects of spontaneous and positive pressure ventilation on intrapleural and intrathoracic pressure and lung volume exhibit differing effects on systolic and diastolic right and left ventricular function. Appreciation of the independent effects of these changes on the components of right and left ventricular cardiac output is key in decision making regarding mechanical ventilation strategies. An understanding of the effects of pressure and volume changes on the right and left ventricles in response to ventilation strategies and maintenance of functional residual capacity is vital to optimize cardiac output and improve ventricular function.

1:45 PM  Questions

NURSING: Strengthening Interdisciplinary Practice in the CICU  Salon 1
Moderators: Dorothy M. Beke, RN, MSN, CPNP-PC/AC; Martha A.Q. Curley, RN, PhD, FAAN

2:00 PM  Nurses are from Venus; Physicians are from Mars: Interpreting the IOM’s Position on Nursing Practice – the RN vs MD Perspective
Paul A. Checchia, MD, FAAP, FCCM, FACC; Patricia Hickey, PhD, RN, MBA, CPHQ, NEA-BC
This presentation will focus on the evidence supporting the IOM recommendations that nurses should practice to the full extent of their education and training and be full partners with physicians in redesigning healthcare in the United States. Strategies for effective collaboration between nurses and physicians to lead change and achieve optimal patient- and family-centered care will be described.
2:20 PM  NP-MD Collaborative Practice in the CICU: What Does That Really Mean and How do You Get it?

Sandra Staveski, CCRN, CNS, CPNP-PC/AC, MS, RN; Stephen Roth, MD, MPH

We will describe an approach to developing collaborative practice within a medical team comprised of physicians and nurse practitioners (NPs) in a pediatric cardiovascular intensive care unit (CICU) and how establishment of a CICU NP service can serve as a case study for a collaborative practice model. CICU NPs have important roles in expanding the care of cardiac intensive patients in an era of reduced physician trainee work hours, enhancing the continuity of patient care, and improving quality and performance via a variety of new leadership roles.

2:40 PM  Panel Participants: Mechanisms for Putting IOM Recommendations into Practice

Break  Salon 4

3:00 PM  Special Session: Pain and Sedation  Salon 3

Moderator: Paul A. Checchia, MD, FAAP, FCCM, FACC

3:30 PM  Anesthesiologist with a View of Basic Science and Basic Pharmacology

Kenneth M. Brady, MD

This lecture will describe the conundrum of anesthetic neurotoxicity from the perspective of a pediatric cardiac anesthesiologist. The nature of anesthetic exposure given to the congenital heart surgery patient will be reviewed in the context of recent understanding of anesthetic-induced neuroapoptosis. The rationale for current anesthetic and sedation practices for infants with heart disease will be reviewed. At the end of the lecture, the audience should understand the risks of giving and withholding anesthesia to an infant with congenital heart disease and therefore delineate the requirements of an alternative sedation plan to our current practice.

3:45 PM  Pain and Sedation

Martha A.Q. Curley, RN, PhD, FAAN

Most critically unstable infants and children in the PCICU receive some form of sedative therapy. Although there are clear benefits, sedative use is associated with iatrogenic injury. This session will discuss nurses’ decision making regarding the use of sedatives and analgesics in the pediatric cardiac intensive care unit: the first step in creating a nurse-implemented goal-directed sedation protocol for use in the PCICU.

4:00 PM  Anesthetic Neurotoxicity and Pediatric Cardiac Surgery

James William Gaynor, MD

4:15 PM  Panel Discussion

Special Session: Chronically Critically Ill Patient  Salon 3

Moderator: Paul A. Checchia, MD, FAAP, FCCM, FACC

4:30 PM  When to Trach?

Ben Sivarajan, MD, MS, FRCPC

The presentation will review the current practice regarding tracheostomy utilization in adult CCM, PCCM and PCICUs. We will review the accepted pros and cons regarding tracheostomy including physiologic benefits in select patient populations. The presentation will center on case discussions which highlight the central management issues and decision making regarding utilization of tracheostomy. Finally, we will review the results of a circulated PCICUS survey distributed for this purpose to look at utilization based on program size, region, and circumstance.
4:45PM  **Caring for the Challenging Family: Has the Pendulum Swung too Far?**  
Nancy Braudis, RN, MS, CPNP  
Successful adaptation in the CICU requires parents to develop a good understanding of their child’s illness and recognize its potential complications and treatment. This must be done in the context of fears regarding survival, a poor outcome, and alteration of lifestyle, which may be manifested as anxiety, guilt, depression, and/or anger. This presentation will highlight the Family Stress Guidelines that were developed as a strategy to enhance working relationships between clinicians and caregivers in the cardiovascular program.

5:00PM  **Feeding and Nutrition and the Effects on Chronic Disease**  
Steven Schwartz, MD, MS, FRCPC  
This session will focus on the challenges and controversies regarding nutritional support of long-term critically ill patients with cardiac disease. Topics to be discussed include the challenges posed by specific anatomic and physiologic abnormalities as well as newer data on metabolic derangements and their association with inflammatory processes. Specific approaches to enteral and parenteral nutrition will be considered.

5:15PM  **ICUs Don’t Do Clinic Work Well: Handoffs, Information Transfer, Team Management, and Continuity Intensivists**  
David Nelson, MD, PhD

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**Poster Grand Rounds**  
5:30PM–6:00PM

**Latin American Delegates Meeting**  
6:00PM–7:00PM

**Junior Faculty/Fellow Reception**  
6:30PM–8:00PM

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**Salon 4**

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**Salon 1**

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**Salon 2**
Special Session

Moderators: Mitchell Cohen, MD, FACC, FHR; Dominic Abrams, MBBS, MD, MRCP

8:00 AM  Electrophysiology: Arrhythmias
David Axelrod, MD; Pamela Hilvers, MD

This presentation includes a case discussion of a neonatal arrhythmia and its management as well as a brief review of the etiology, pathophysiology, and management of the arrhythmia.

PCICS/ELSO Joint Consensus Statement Mechanical Circulatory Support

Moderators: Graeme MacLaren, MBBS, FCCM; Heidi Dalton, MD, FCCM; Ali Dodge-Khatami, MD, PhD

9:00 AM  Introduction
Graeme MacLaren, MBBS, FCCM

Mechanical circulatory support in children is complex and requires a trained multidisciplinary team to effectively deploy it. The purpose of this statement, the first collaboration between the Pediatric Cardiac Intensive Care Society and the Extracorporeal Life Support Organization, is to present a series of recommendations about how to optimize this therapy. The introduction will place the Statement in context, emphasizing its purpose, relevance, methodology, and dedication.

9:05 AM  Overview of Pediatric Mechanical Circulatory Support
Lara Shekerdemian, MD, MB BCh, FAAP, FCICM, FRCPCH

9:15 AM  Extracorporeal Membrane Oxygenation
Robert H. Bartlett, MD

9:45 AM  Pediatric Ventricular Assist Devices
Brigitte Stiller, MD

The aim of a VAD is to unload the heart and to provide peripheral circulation sufficient to ensure adequate functioning of the organs. By reducing cardiac work and oxygen consumption, the device liberates the energy required for repair processes, and synchronized heart performance can thus lead to recovery of the myocardium or it can increase the chances of the patient undergoing heart transplantation. The objective of this talk is to answer clinical questions like: Which device for which patient at what time? Optimal unloading can increase the chance for recovery, but how to decide about weaning strategies? Is long-term support for the failing univentricular heart an option?

10:15 AM  Anticoagulation
Gail Annich, MD, MS, FRCPC, FAAP

This presentation will deal with normal hemostasis, the interaction of both the coagulation cascade and platelets. It will address the response that occurs when blood interacts with artificial surfaces and the derangements in coagulation that ensue with this. The present strategies to prevent thrombosis and clotting within these devices will be discussed which will include present anticoagulation agents/strategies along with future development of biocompatible surfaces. The challenges of monitoring, maintaining patency of extracorporeal circuitry and prevention of sequelae as it relates to extracorporeal life support will also be addressed.

10:30 AM  Medical Care of the Child on Mechanical Circulatory Support
Steven Schwartz, MD, MS, FRCPC

This is a general review of current issues of medical care of children on mechanical circulatory support. Knowledge gained from practical experience will be combined with supporting evidence, and we will discuss controversies for which evidence is inconclusive. The scope of the review includes assessment and monitoring, cardiovascular, pulmonary and renal and fluid management as well as infection prevention and treatment, and neurological and nutritional considerations. Physical and psychological care will be discussed as well as ethical and practical issues regarding termination of support.
10:45 AM  Nursing Care of the Child on Mechanical Circulatory Support
Alicia Schmidt, RN, MSN
My presentation will focus on nursing considerations for professionals caring for children requiring all forms of mechanical circulatory support with an emphasis on extracorporeal life support/ECMO. Topics of interest will include but not be limited to special considerations when caring for awake patients, using new sedation strategies, skin protection and wound care, activities of daily living, and psychological support for patients and families. Additional focus will be on device management and troubleshooting.

11:30 AM  Mechanical Circulatory Support in Special Situations
Peter C. Laussen, MBBS, FCICM

11:45 AM  Recurrent or Prolonged Mechanical Circulatory Support
Yves d’Udekem, MD, PhD, FARCS

12:00 PM  Outcomes
Ravi R. Thiagarajan, MBBS, MPH

12:15 PM  Setting up an ECLS Program
Anne-Marie Guerguerian, MD, PhD, FRCPC, FAAP

12:30 PM  Future Directions
Heidi Dalton, MD, FCCM
This presentation will bring together a synopsis of the presentations which will be included in the Mechanical Support supplement to be published by Pediatric Critical Care Medicine. Coverage will include: 1. an update of the extracorporeal life devices that currently exist; 2. what are the expected complications and outcomes from these devices; and 3. what the future holds to improve our understanding and use of these devices.

12:45 PM  Mechanical Circulatory Support in Children: Questions & Answers

Moderator: Heidi Dalton, MD, FCCM

1:00 PM  Lunch

1:20 PM  Introduction
Heidi Dalton, MD, FCCM
This session will describe the purpose of the afternoon session and briefly review topics to be discussed: 1. the differences between VADs and ECMO; 2. how to decide which mode of support is best for patients; 3. a hands-on time to see and discuss devices; 4. the economics of device use; and 5. case discussion from the audience

1:30 PM  Central Cannulation: Who and When?
Graeme MacLaren, MBBS, FCCM
Central ECMO cannulation has a number of unique advantages and disadvantages. The rationale and evidence for this strategy will be presented from the perspective of the pediatric intensivist caring for patients who have not had recent surgery. Specific management techniques and pitfalls will be highlighted.

2:00 PM  Practical Surgical Considerations in Cannulation
Yves d’Udekem, MD, PhD, FARCS

2:30 PM  VADs and ECMO: What’s Available and What Would I Pick When?
Steven Schwartz, MD, MS, FRCPC

3:00 PM  Break with Demos and Vendors

3:30 PM  Utilization and Economics of Mechanical Support
Michael McMullan, MD

4:00 PM  Wrap Up and Questions from the Floor/Case Discussions
All speakers