



# Fetal Echocardiography Preceptorship Program

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[ce.childrenscolorado.org](http://ce.childrenscolorado.org)

**May 20 – 21, 2022**

*Hosted virtually*

- Virtual lectures
- Live Q & A
- Live scanning demonstrations
- Guest speaker Lisa Howley, MD

**Provided by**

**Colorado Fetal  
Care Center**



Children's Hospital Colorado



Children's Hospital Colorado  
Heart Institute

## Overview and Target Audience

Congenital heart disease (CHD) is the most common congenital defect and has the highest mortality of any congenital defect within the first year of life. Recognizing CHD before birth can improve both prenatal and postnatal outcomes.

Certain pregnancies are known to be at high risk for CHD, yet most fetal cardiac defects occur in low risk pregnancies. Thus, one way to improve the outcome of fetal CHD is to improve prenatal detection of CHD in both high and low-risk pregnancies.

The Fetal Echo Preceptorship Program is a short apprenticeship of fetal echocardiography divided into lectures describing the evaluation of structural and functional cardiac anomalies and arrhythmias, demonstrations of scanning technique, and interactive case studies.

The target audience is health care providers interested in improving their skills in the diagnosis, treatment and understanding of fetal cardiac anomalies including: Obstetrical sonographers and fetal echocardiography sonographers, obstetrical care providers, and fetal cardiologists.

## Educational Objectives

- Identify components of the basic fetal echocardiogram
- Describe the use of Doppler in the fetal cardiac evaluation
- Identify abnormal pulsed and color Doppler findings
- Improve ultrasound image optimization
- Interpret normal and abnormal fetal echocardiograms
- Recognize and describe the normal 3 vessel view
- Describe how to identify ductal dependent fetal cardiac anomalies
- Describe different types of pulmonary and systemic venous anomalies
- Define the techniques to evaluate fetal rhythm

## Continuing Education Credits

**Medical:** Children's Hospital Colorado is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

Children's Hospital Colorado designates this Other activity (internet live course) for a maximum of 11.25 AMA PRA Category 1 Credit(s).™ Physicians should only claim credit commensurate with the extent of their participation in the activity.

**Others:** A general certificate of attendance will be given to all other providers.



## Further Information

Learning is a lifelong process. Participants are invited to contact our faculty with any questions or concerns. We are happy to give a second opinion or lend a hand to our former students. We welcome any perplexing cases! Our goal is to advance knowledge and improve the outcome of fetal cardiac disease.

## Faculty



### Bettina Cuneo, MD

*Director of Perinatal Cardiology and Fetal Telemedicine*

*Professor of Pediatrics and Obstetrics*

Dr. Cuneo has been practicing perinatal cardiology and fetal echocardiography since 1992. Her expertise and research interests include fetal arrhythmias in general and fetal Long QT syndrome and SSA mediated cardiac disease specifically.



### Nicohlas Behrendt, MD

*Maternal Fetal Medicine Specialist*

Nick Behrendt attended medical school at the University of Nebraska Medical Center and then completed his residency in Obstetrics and Gynecology at The Ohio State University. After residency, he completed a Maternal-Fetal Medicine Fellowship at the University of Colorado which led to a fellowship in Fetal Surgery at Children's Hospital Colorado. He is now an Associate Professor of Obstetrics and Gynecology spending his clinical time at the Colorado Fetal Care Center located within Children's Hospital Colorado where he focuses on the evaluation, diagnosis and treatment of fetal disease.

## Faculty (Continued)



### **Camila Londono-Obergon, MD**

#### *Fetal Cardiologist and Adult Congenital Cardiologist*

Dr. Londono-Obergon moved to Colorado Springs in 2019 to join University of Colorado Congenital Cardiology and Fetal Cardiology teams. She completed her pediatric cardiology fellowship at The Children's Hospital of Philadelphia. After completing her fellowship, she worked in San Antonio Texas for 8 years as the director of the Adult Congenital Program and as a pediatric and fetal cardiologist. Dr. Londono-Obergon grew up in Colombia and completed her medical training at San Francisco de Quito University in Ecuador. She earned a scholarship from the Dutch government which allowed her to go to Holland to do research in heart failure and arrhythmias. In 2003 she returned to Colombia where she practiced underserved medicine and taught at the local university for 3 years. In 2006, she moved to the U.S. where she did her residency training in pediatrics at the University of Texas Medical School in Houston and her cardiology training at Children's Hospital of Philadelphia, PA. Her areas of interest include non-invasive imaging with emphasis in fetal imaging and adults with congenital heart disease. As a member of the Congenital Cardiology team she is invested in establishing long-term relationships with her patients and families with the objective of transitioning patients into adulthood in a smooth fashion with the goal of helping each individual attain their maximal potential.



### **Karrie Villavicencio, MD**

#### *Pediatric and Fetal Cardiologist*

Dr. Villavicencio is a board-certified pediatric cardiologist who specializes in fetal echocardiography. She follows children with heart disease in the pediatric cardiology clinic and enjoys caring for patients with complex congenital heart disease as she is able to meet the mother during pregnancy and follow the child as they grow. Karrie feels very fortunate to do fetal echocardiography because she has the chance to meet wonderful people and provide care for both mother and baby during very difficult times for these very special patients. For her, fetal cardiology is a very rewarding profession and she enjoys coming to work each day for the new experiences each day brings. Here at the Colorado Fetal Care Center, we see a significant variety of patients with varying problems from congenital heart defects to other organ defects that may affect the heart. We are able to provide state-of-the-art care for these babies that it is truly an honor to partake in. Dr. Villavicencio looks forward to new challenges and learning opportunities that the world of fetal echocardiography presents.



### **Lisa Gilbert, BS, RDCS, RVT**

#### *Fetal Sonographer*

Ms. Gilbert began her echocardiography career in 2000 and is registered in adult, pediatric and fetal echo. She has worked in Florida, Texas and joined Children's Hospital Colorado in 2011. Lisa oversees the quality assurance evaluation for the fetal echocardiography lab. She has extensive experience with the perinatal evaluation of complex congenital heart disease, rhythm evaluation and the cardiac evaluation in Twin to Twin Transfusion Syndrome (TTTS).



### **Dawn Park, BS, RDCS, RDMS, FASE**

#### *Pediatric and Fetal Cardiac Sonographer*

Ms. Park graduated from the College of West Virginia with her degree in Diagnostic Medical Sonography in 2000. After working for many years in Michigan as a cardiac sonographer and a travel cardiac sonographer in California and Florida, she joined Children's Hospital Colorado in 2009. Ms. Park is currently the education coordinator for our pediatric and fetal echocardiography lab. She also volunteers with American Society of Echocardiography (ASE).



### **Kristen Snyder, RN, BSN**

#### *Fetal Cardiology Nurse Coordinator*

Kristen earned her bachelor's degree in nursing from Massachusetts College of Pharmacy and Health Sciences in 2012. She began her career on a medical/surgical floor but quickly realized her passion for maternal and fetal health. After years of bedside nursing, Kristen became the fetal cardiology nurse coordinator at the Colorado Fetal Care Center in 2019.

## Guest Speaker



### **Lisa Howley, MD**

#### *Pediatric Cardiologist, Children's Heart Clinic*

#### *Director, Fetal Cardiology Program*

#### *Scientific Director of CVCC research, The Children's Heart Clinic/Children's Minnesota Midwest Fetal Care Center*

Dr. Howley completed her pediatrics residency and pediatric fellowship at the University of Colorado and her fetal cardiology fellowship at University of Alberta in Edmonton, Alberta. She began her fetal cardiology career at the Colorado Fetal Care Center at Children's Hospital Colorado in 2010 and served as the Co-Director of the fetal cardiology program alongside Dr. Bettina Cuneo. In 2019 Dr. Howley moved to the upper Midwest to take on the role of Director of Fetal Cardiology at Children's Minnesota and the Midwest Fetal Care Center. Dr. Howley is a talented clinician, researcher and educator in the field of fetal cardiology. She is involved in numerous multicenter research endeavors to forward the field of fetal cardiac diagnosis and prenatal care. She most enjoys educating sonographers and simplifying complex topics! Dr. Howley is married with two kids and loves skiing and the outdoors.

# Agenda

**DAY 1:** The first day is devoted to learning the protocol for fetal cardiac evaluation. Lectures will concentrate on indications for fetal echocardiography and the complete evaluation of the normal and abnormal fetal heart. During the remainder of the session, the participants will observe our fetal sonographers perform a live fetal echocardiogram.

- 1 - 1:30 p.m. **Welcome & Pre-Test**  
*Bettina Cuneo, MD*
- 1:30 - 1:50 **Staying up to Date: When is a Fetal Echocardiogram Indicated?**  
*Lisa Howley, MD*
- 1:50 - 2:50 **Four Chamber Fetal Hearts: When It's Not Normal**  
*Dawn Park, RDCS*
- 2:50 - 3 **Q and A**  
*Lisa Howley, MD and Dawn Park, BS, RDCS, RDMA, FASE*
- 3 - 3:15 **Break (15 min)**
- 3:15 - 3:35 **Interesting Case**
- 3:35 - 4:05 **Fetal Echocardiography Before 16 Weeks Gestation**  
*Camila Londono-Obergon, MD*
- 4:05 - 4:15 **Q and A**  
*Camila Londono-Obergon, MD*
- 4:15 - 5:15 **Live Scanning Demonstration**  
*Dawn Park, RDCS, Bettina Cuneo, MD and Lisa Howley, MD*
- 5:15 **Adjourn**

**DAY 2:** On the second day we will concentrate on the diagnosis of more complex disorders and fetal arrhythmias. Multiple examples of complex structural defects and rhythms will be presented.

- 8 - 8:05 a.m. **Welcome**  
*Bettina Cuneo, MD*
- 8:05 - 8:35 **Outflow Tract Anomalies: The Role of the 3VV and 3VTV**  
*Lisa Howley, MD*
- 8:35 - 8:55 **What Dopplers Can Tell You**  
*Karrie Villavicencio, MD*
- 8:55 - 9:10 **Controlling the Chaos: The Role of the Fetal Cardiology Nurse Coordinator**  
*Kristen Snyder*
- 9:10 - 9:20 **Q and A**  
*Lisa Howley, MD and Karrie Villavicencio, MD*
- 9:20 - 9:35 **Break (15 min)**
- 9:35 - 10:05 **Recognition and Risk Stratification of Great Artery Anomalies in the Fetus**  
*Camila Londono-Obergon, MD*

- 10:05 - 10:20 **Interesting Cases**  
*Lisa Gilbert, RDCS*
- 10:20 - 10:30 **Q and A**  
*Camila Londono-Obergon, MD and Lisa Gilbert, RDCS*
- 10:30 - 11:15 **Case Studies in Maternal-Fetal Medicine and Fetal Cardiology: A Symbiotic Relationship**  
*Nick Behrendt, MD*
- 11:15 - 11:20 **Q and A**  
*Nick Behrendt, MD*
- 11:20 - 12:15 p.m. **Break (55 min)**
- 12:15 - 1 **Fetal Ebsteins: Recognizing Higher Risk Patients and Fetal Management Strategies**  
*Camila Londono-Obergon, MD*
- 1 - 1:10 **Q and A**  
*Camila Londono-Obergon, MD*
- 1:10 - 1:30 **Too Fast, Too Slow, or Irregular: Diagnosis of Fetal Arrhythmia**  
*Bettina Cuneo, MD*
- 1:30 - 1:50 **How to Scan a Fetus With an Arrhythmia**  
*Dawn Park, RDCS*
- 1:50 - 2:15 **Treatment of Arrhythmia**  
*Bettina Cuneo, MD*
- 2:15 - 2:25 **Q and A**  
*Bettina Cuneo, MD and Dawn Park, RDCS*
- 2:25 - 2:35 **Break (10 min)**
- 2:35 - 3:25 **Heterotaxy: Finding Clarity in the Chaos**  
*Lisa Howley, MD*
- 3:25 - 4:15 **In Utero Treatment of Structural Cardiac Defects**  
*Karrie Villavicencio, MD (50 min)*
- 4:15 - 4:30 **Q and A**  
*Lisa Howley, MD and Karrie Villavicencio, MD*
- 4:30 - 4:50 **Post-Test**  
*Bettina Cuneo, MD*
- 4:50 - 5 **Adjourn**

**Total Credits: 11.25 CE**

## Registration Fees (Virtual Only)

Trainee: \$75.00

Sonographer: \$125.00

Physician: \$175.00

Register Here: Course Contact Amanda Keith.



[Amanda.Keith@childrenscolorado.org](mailto:Amanda.Keith@childrenscolorado.org)



720-777-5627



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*"This course is amazing. I will continue to attend and bring my sonographers with me."*

*"Conference was wonderful, presenters were very knowledgeable, kind and gave ample time for questions."*

*"I learned so much!"*

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