Cardiovascular Imaging Core (CIRC)

The Cardiovascular Imaging Core (CIRC) opened in January 2011 at Children's Healthcare of Atlanta, Egleston Campus. The CIRC core lab provides high quality, non-invasive cardiac imaging support for investigators involved in clinical research involving infants, children and adolescents in a dedicated research setting. Dedicated staff have experience transcending innovation by developing and utilizing imaging modalities and techniques not typically seen in the clinical arena . CIRC's dedicated laboratory space is located in the Children's Healthcare of Atlanta, Egleston and Scottish Rite campuses.

Team Members

Ritu Sachdeva, MD, FACC, FASE
Medical Director

Joan Lipinski, MS, RDCS, RDMS
Manager of Echocardiography & CIRC

Kelsey Zinck, MPH
Research Coordinator
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Cortlin Yancey, BS
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Sassan Hashemi, MD
Imaging Scientist

Research Sonographers

David Cox, RDCS

Gemma Morrow, RDCS

Brian Schlosser, BS, RDCS, RDMS, FASE

Amanda Harding, RDCS

How to Access the CIRC

The main CIRC lab is located at
Children's Healthcare of Atlanta
at Egleston in
Outpatient Cardiac Services
2nd Floor of Tower 1
Phone: (404) 785-CIRC (2472)
CIRC@choa.org
http://www.pedsresearch.org/cores/detail/cardiovascular-imaging-research-core-circ

Meet the New Staff

Cortlin Yancey, BS

Research Coordinator

Cortlin was born and raised with a younger brother in Augusta, Ga, or what most people know as the home of the Masters and James Brown. She moved to the Atlanta area to receive her Bachelor of Science in Exercise and Health Science at Kennesaw State University. Before CHOA, she was a Research Coordinator in HIV/AIDS trials for Augusta University and then the School of Nursing at Emory University. Cortlin spends her spare time traveling with family, serving the community and mentoring young girls with her sorority, and most recently wedding planning.

Amanda Harding, RDCS

Research Sonographer

Amanda received her Associates of Applied Science in Echocardiography from Georgia Northwestern Technical College. Before coming to CHOA as a sonographer, she was a front office coordinator at Wellstar Kenmar Pediatrics. Amanda has also spent time volunteering with the Atlanta Zoo. She was a part of the Great Ape Heart Project, where she performed awake ultrasounds on orangutans and gorillas and can be found on YouTube. When she isn't at CHOA, Amanda is spending time with her four year old daughter.

Our Services

Echocardiograms

- Transthoracic Echocardiography
  - 2-dimensional (2-D) echocardiography
  - Color and spectral Doppler echocardiography
  - M-Mode echocardiography
  - Tissue Doppler Velocity Imaging
  - Real-time 3-D Imaging
  - Strain and Strain rate imaging
- Transesophageal Echocardiography
- Fetal Echocardiography
- Stress Echocardiogram

Exercise stress testing

Electrocardiograms

Vascular function assessment:

- Carotid intimal medial thickness (cIMT)
- Brachial flow mediated dilation (FMD)
- Applanation tonometry

Cardiac magnetic resonance imaging (cMRI)

- Cardiac function quantification
- Phase-contrast velocity mapping
- Coronary imaging
- Scar imaging and quantification
- Cycle Ergometer exercise MRI
- Strain analysis (feature tracking)
- 4-dimensional flow analysis

Data Core site capabilities

- Data storage
- Data management
- Data analysis

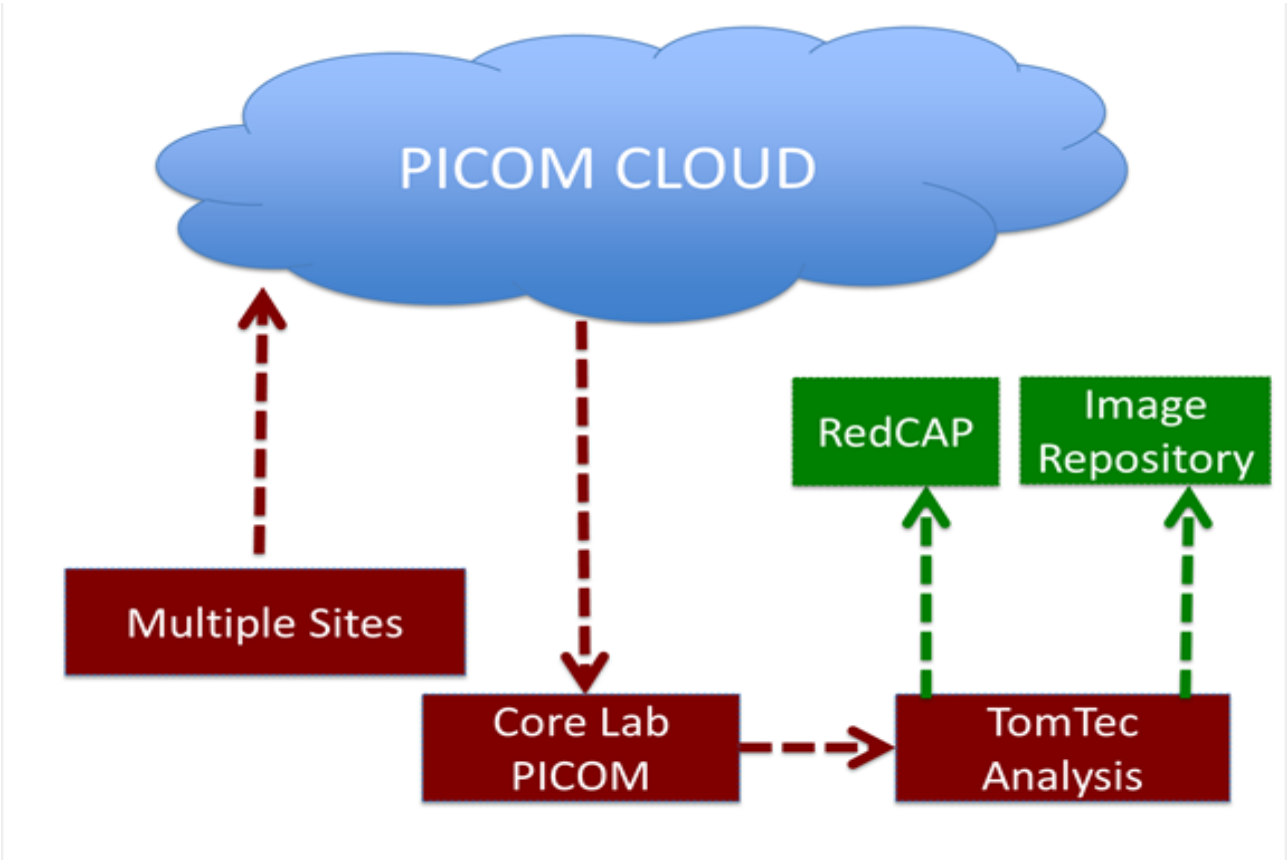
Consultative expertise for protocol development

Post-processing of previously acquired images

- DVD burning
- Shipping DVDs with images

CIRC Multicenter Core Lab

CIRC has the capabilities of serving as the multicenter imaging core lab. This is brief overview of what this involves for the core lab as well as the sites participating in the study. After project initiation and data use agreements in place, participating sites de-identify images and place them on CDs. Through the CDs, the images are then uploaded to a cloud based server, PICOM (ScImage), which is HIPPA-compliant PACS (picture archiving and communication system). Once images are uploaded to PICOM, our core site is able to access those images for analysis. The images are downloaded from PICOM and pushed into a vendor-neutral software analysis package, TomTec. CIRC staff are responsible for measuring images and gathering data based on parameters outlined in the study protocol. These results are entered into a REDCap or another database chosen by the study. To ensure the most precise results, data is analyzed for outliers and possible anomalies are reassessed. CIRC then maintains the images in an image repository, a dedicated hard drive with large store space.



Cardiac Function in Childhood Cancer Survivors-Multicenter Study

The Cardiovascular Imaging Research Core served as the core lab for the multi-center study "Echocardiographic Changes in Childhood Cancer Survivors at Risk for Cardiomyopathy," sponsored by the Rally Foundation. The study looked at whether changes in serial echocardiographic parameters were associated with cardiomyopathy. Echocardiograms from the five participating sites were submitted to CIRC, with over 500 studies. Initial data was presented as an oral abstract entitled "Longitudinal Change in Echocardiographic Parameters of Cardiac Function in Childhood Cancer Survivors: A Multicenter Study" at the 2018 American Society of Echocardiography Annual Scientific Sessions. This case-control study included 48 cases and 48 controls. This study concluded that there was a decline in standard echocardiographic parameters up to 3 years prior to cardiomyopathy diagnosis (Figure). suggesting that high-risk survivors can be identified prior to the onset of clinical symptoms or an abnormal echocardiogram. Careful attention to rate of change may lead to earlier diagnosis of high-risk individuals. This may allow for early treatment and potential modification of disease course.

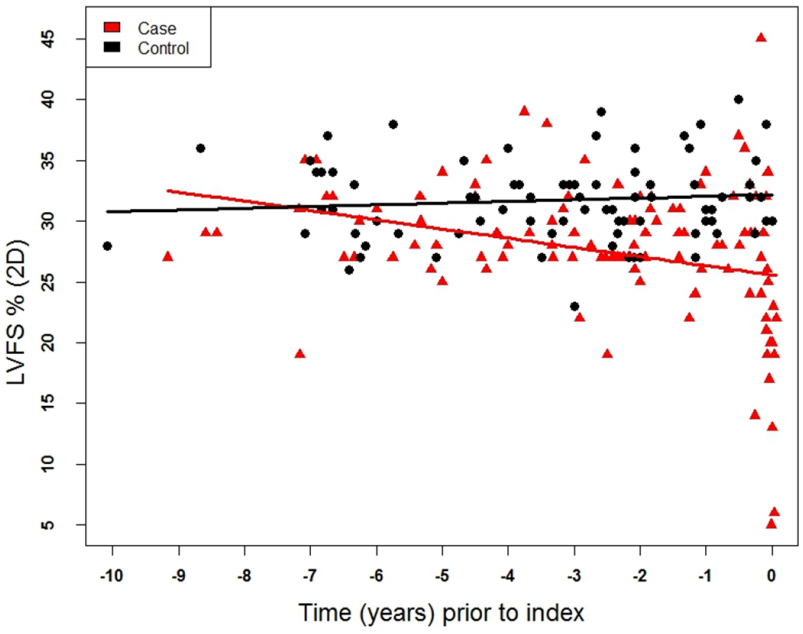


Figure. Left ventricular fractional shortening (LVFS) as measured by 2-dimensional echocardiography starts declining in cases much before the diagnosis of cardiomyopathy.

Recent Presentations

Our team is committed to research and has had the opportunity to contribute to medical science through abstract presentations and publications. Below is a list of selected abstracts presented within the last year at various national and regional meetings through research supported by CIRC.

American Society of Echocardiography

Longitudinal Change in Echocardiographic Parameters of Cardiac Function in Childhood Cancer Survivors: A Multicenter Study. William L. Border, Ritu Sachdeva, Kayla L. Stratton, Saro H. Armenian, Aarti Bhat, David E. Cox, Kasey J. Ledger, Wendy M. Leisenring, Lillian R. Meacham, Karim T. Sadak, Paul C. Nathan, Shanti Sivanandam, Eric J. Chow

Integration of the Pediatric Appropriate Use Criteria with Electronic Medical Records Ordering System as a Decision Support Tool. Soham Dasgupta MBBS, Michael S. Kelleman MSPH, Courtney McCracken PhD, Ritu Sachdeva MBBS

Application of Pediatric Appropriate Use Criteria for Initial Outpatient Evaluation of Asymptomatic Patients with Abnormal Electrocardiograms. Soham Dasgupta MBBS, Michael S. Kelleman MSPH, Shae Anderson MD, Ritu Sachdeva MBBS

Diagnostic Value of Echocardiography Speckle Tracking and Magnetic Resonance Feature Tracking in Children with Myocarditis. Sassan Hashemi MD, James Parks MD, Denver Sallee MD, Ritu Sachdeva MBBS, Timothy Slesnick MD

Echocardiographic Surveillance in Children After Tetralogy of Fallot Repair: Adherence to Guidelines? Vindhya Annavajjhala, Anne M. Valente, Leo Lopez, Ritu Sachdeva, Julie S. Glickstein, Shobha S. Natarajan, Sujatha Buddhe, Karen Altmann, Brian D. Soriano, John L. Colquitt, Carolyn A. Altman, Nao Asaki, Charlotte Sakarovitch, Theresa A. Tacy, Tal Geva, Elif Seda Salamet Tierney.

Challenges with LV Functional Parameters: The Pediatric Heart Network Normal Echocardiogram Database. Ritu Sachdeva (co-author)

Southeastern Pediatric Research Innovation Conference

Diagnostic Value of Echocardiography Speckle Tracking and Magnetic Resonance Feature Tracking in Children with Myocarditis. Sassan Hashemi MD, James Parks MD, Denver Sallee MD, Ritu Sachdeva MBBS, Timothy Slesnick MD

Workflow Analysis of Cardiovascular Imaging Research Core (CIRC) Services: A Research Staff Survey. Kelsey Zinck MPH, Nicole Krupa MPH, Ritu Sachdeva MBBS, Joan Lipinski MHS, RDCS, RDMS

Newsletter Contest

Thank you for reading our newsletter!

If you are able to correctly answer the 3 questions below, email the answers to CIRC@choa.org with the subject line ***CIRC Newsletter Contest*** by **9/14** to be entered in our prize drawing! Please include your name, email address and phone number with your email submission.

Hint Answers can be found in the newsletter.

1. Which campuses does CIRC service?

2. CIRC is one of a handful of multicenter labs in the country?

-True

- False

3. CIRC was the core lab for a multicenter study funded by who?