

The Division of Pediatric Cardiology provides comprehensive care for children with heart disease, conducts seminal research, promotes innovation, facilitates quality science initiatives and oversees an internationally recognized training program.

Under the direction of Nicolas Madsen, M.D., M.P.H, the Division provides services at Children’s Medical Center Dallas, Children’s Medical Center Plano, and across North Texas in:

- Outpatient clinics (~12,000 visits/year)
- A 22-bed dedicated acute care cardiology unit
- A 28-bed dedicated Cardiac Intensive Care Unit
- Three Dallas-based and one Plano-based catheterization laboratories for diagnostic and interventional procedures, including catheter ablation
- A 1.5T dedicated cardiac MRI scanner in immediate proximity to the cardiac catheterization laboratory allows for combined MRI – cardiac catheterization procedures (XMRI)
- All imaging facilities are in close proximity to the OR allowing intra- and periprocedural assessment
- An echocardiography suite, including specified areas for fetal echocardiography, as well as a complete non-invasive monitoring laboratory



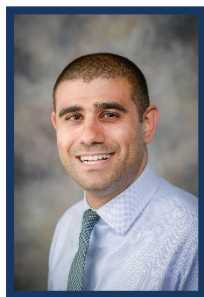
Nicolas Madsen, M.D., M.P.H  
Associate Professor, Division Chief

**Division Faculty**

The Division has 27 pediatric cardiologists, each with unique expertise, including critical care medicine, interventional catheterization, electrophysiology, advanced imaging including echocardiography and fetal echocardiography, cardiac Magnetic Resonance Imaging (MRI) and Computed Tomography (CT), cardiac transplantation, heart failure, prevention, and adults with congenital heart disease. Eight faculty joined the Division in 2021.

**Yousef M. Arar, M.D., M.P.H.**

Assistant Professor



- B.A.**, Biochemistry  
University of Texas, Austin, TX, 2010
- M.D.**  
University of Texas Health Science Center, San Antonio, TX, 2014
- M.P.H.**  
University of Texas Health, San Houston, TX, 2014
- Postdoctoral Training**  
Residency, Pediatrics  
University of Texas Health, San Antonio, TX, 2014 – 2017  
Fellowship, Pediatric Cardiology  
UT Southwestern, Dallas, 2017-2020  
Fellowship, Pediatric Interventional Cardiology  
UT Southwestern, Dallas, 2020-2021
- Interests:** Soccer, cycling, hiking, dogs, and spending time with his family

## Sravani Avula, M.D.

Assistant Professor



### **B.S., Basic Health Sciences**

Manipal University/Kasturba Medical College, Manipal, India, 2009

### **M.D.**

Kasturba Medical College/University of Antigua College of Medicine, Coolidge, Antigua, 2012

### **Postdoctoral Training**

Residency, Pediatrics

Michigan State University/Sparrow Hospital, Lansing, MI, 2013 – 2016

Residency, Pediatrics Cardiology

Children's Hospital of Michigan, Detroit, MI, December 2014

Fellowship, Pediatric Cardiology

Children's Hospital of New Orleans/Louisiana State University Health Sciences Center, 2016 – 2019

**Interests:** Hiking, cooking and painting

## Radomir Chabiniok, M.D., M.S., Ph.D.

Assistant Professor



### **M.D.**

Charles University, Prague, Czech Republic, 1999-2006

### **M.S.**

Charles University, Prague, Czech Republic, 2002-2007

### **Ph.D. Applied Mathematics**

University Paris 6, Paris, France, 2007-2011

### **Postdoctoral Training**

Clinical Research Fellow, Radiology/MRI

Institute for Clinical and Experimental Medicine, Prague, Czech Republic, 2006 – 2007

Ph.D. Biomechanical Heart Modeling

French National Institute for Digital Sciences Inria, Paris, France, 2007 – 2010

Postdoctoral Instructor, Division of Imaging Sciences and Biomedical Engineering

King's College, London, United Kingdom, 2011 – 2015

Junior Research Scientist – Research program “Clinical Application of Cardiac Modeling”

French National Institute for Digital Sciences (Inria) 2015-2018

Senior Research Scientist

French National Institute for Digital Sciences (Inria) 2018-2020

Part-time lecturer

King's College London, School of Biomedical Engineering and imaging Sciences (2015-2020)

**Interests:** Hockey and photography

## Abhay Divekar, M.D.

Assistant Professor



### M.D. (M.B.B.S)

Lokmanya Tilak Municipal Medical College, India, 1992

### Postdoctoral Training

Residency, Pediatrics

KEM and Bai Jerbai Wadia Hospital, Mumbai, India, 1992 - 1995

Residency, Pediatrics

Brooklyn Hospital Center, Brooklyn, NY, 1995 - 1997

Fellowship, Pediatric Cardiology

New York University Medical Center, New York, NY, 1997 - 2000

Fellowship, Cardiac Critical Care and Interventional Catheterization

C.S. Mott Children's Hospital, Ann Arbor, MI, 2000 - 2001

**Interests:** Running, hiking, biking, RV trips and education in different fields using YouTube and Audible books

## Munes Fares, M.D.

Assistant Professor



### M.D.

Damascus University, Syria, 2012

### Postdoctoral Training

Research Fellowship

American University of Beirut, Beirut, Lebanon (2012-2013)

Pediatric Internship

American University of Beirut, Beirut, Lebanon (2013 – 2014)

Residency, Pediatrics

Marshall University/Joan C. Edwards School of Medicine, Huntington, WV, 2014 – 2017

Fellowship, Pediatric Cardiology

Case Western Reserve/University Hospitals Cleveland, OH, 2020

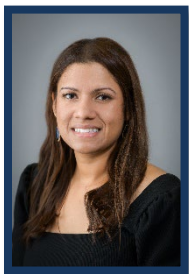
Fellowship, Pediatric Advanced Cardiac Imaging

UT Southwestern, Dallas, TX, 2021

**Interests:** Cooking, reading, running and travel

## Mansi Gaitonde, M.D.

Assistant Professor



### M.D.

UT Southwestern Medical School, Dallas, TX, 2014

### Postdoctoral Training

Residency, Pediatrics

Emory University School of Medicine, Atlanta, GA, 2014 – 2017

Fellowship, Pediatric Cardiology

Emory University School of Medicine, Atlanta, GA, 2017- 2020

Fellowship, Pediatric Cardiac Non-invasive Imaging

Emory University Atlanta, GA, 2020-2021

**Interests:** Ballet, cooking, travel, hiking and art museums

## Jenna Keelan, M.D.

Assistant Professor



**B.S.,** Biology and Economics  
Muhlenberg College, Allentown, PA, 2010

**M.D.**  
New York University School of Medicine, New York, NY, 2014

### Postdoctoral Training

Residency, Pediatrics

New York Presbyterian Hospital, Cornell Campus, New York, NY, 2014 – 2017

Fellowship, Pediatric Cardiology

New York Presbyterian Morgan Stanley Children's Hospital, Columbia/Cornell Campus,  
New York, NY, 2017 - 2020

Fellowship, Advanced Pediatric Cardiac Imaging

Mount Sinai Kravis Children's Hospital, Icahn School of Medicine, Mt. Sinai, NY, 2020 - 2021

**Interests:** Cooking, running, and traveling

## Nicolas Madsen, M.D., M.P.H

Associate Professor/Division Chief



**B.S.,** Neurodevelopment, Behavior, and Physiology  
University of California at Davis, Davis, CA, 1999

**M.D.**  
University of Washington School of Medicine, Seattle, WA, 2005

**M.P.H.**  
University of Washington School of Public Health, Seattle, WA, 2011

### Postdoctoral Training

Residency, Pediatrics

University of Washington/School of Medicine, Seattle, WA, 2005 – 2008

Fellowship, Senior Epidemiology

University of Washington/School of Public Health, Seattle, WA, 2008 – 2009

Fellowship, Pediatric Cardiology

University of Washington/ School of Medicine, Seattle, WA, 2009 - 2012

**Interests:** Spending quality time with my family

## Honors / Awards

### Best Pediatric Specialists in Dallas, *D Magazine*

- Matthew Lemler
- Claudio Ramaciotti
- William Scott
- Thomas Zellers

### Texas Super Doctors, *Texas Monthly*

- Catherine Ikemba
- Colin Kane
- Matthew Lemler
- Lynn Mahony
- Claudio Ramaciotti
- William Scott
- Surendranath Veeram Reddy
- Thomas Zellers

### JCMR Best Manuscript – 14th Gerald M. Pohost “Runner Up” Award

- Yousef M. Arar
- Joshua Greer
- Surendranath Reddy

### Mansi Gaitonde

- American Heart Association Young Hearts Early Career Investigator Award Winner – 2021

## Invited Lectures

### Maria Bano

- Pediatric Grand Rounds, Texas Tech University Health Sciences, El Paso, TX, April 2021
  - *“Exercise Physiology and Cardiovascular Fitness in Children and Young Adults”*

### Radomir Chabiniok

- Virtual Physiological Human Institute, Virtual, February 2021
  - Keynote Webinar series, *“Translational Cardiovascular Modeling”*
- Workshop Cardio MRI, Millennium Nucleus in Cardiovascular Magnetic Resonance, Virtual, May 2021
  - Plenary Talk, *“MRI data and biomechanical modeling in translational cardiovascular research”*

### Abhay Divekar

- SCAI Fellow Course, Miami, FL, December 2021 (Co-Chair)
  - Invited Speaker, *“Radiation Safety in the Catheterization Laboratory”*
  - Invited Speaker, *“Advanced Hemodynamics”*
  - Invited Speaker, *“2D and 3D Angiography”*

### Mansi Gaitonde

- American Heart Association, Philadelphia, PA, Virtual, November 2021
  - *Young Hearts Early Career Investigator Award Competition*

### F. Gerald Greil

- Annual Meeting of the Association for European Pediatric and Congenital Cardiology, Virtual, May 2021
  - *“End Stage Heart Disease, Morphology & Cardiac Imaging”*

### Catherine Ikemba

- Grand Rounds Presentation by Department of Pediatrics Cardiology at Children’s Health, Dallas, TX, September 2021
  - *“Difficult Discussions, Ethical Issues, and Matters of the Heart”*

### Nicolas Madsen

- Pediatric Cardiac Critical Care Consortium (PC4), December 2021, Virtual Conference
  - *“Pediatric Acute Care Cardiology Collaborative (PC<sup>3</sup>)”*

## Kavita Sharma

- Pediatric Society of Greater Dallas, TX, June, 2021
  - *"MISC and the Heart"*

## Surendranath Reddy Veeram

- 12<sup>th</sup> European Meeting on Adult Congenital Heart Disease, Seville, Spain, Virtual, May 2021
  - *"MRI Guided Procedures – Lessons from Pediatric Cardiology"*
- SCAI Fellow Course, Miami, FL, December 2021
  - *Biodegradable Technologies*
  - *MRI Interventions*
- Rady Children's, University of California, October 2021 (Virtual presentation)
  - *"Review of ICMR and Lymphatic interventions protocols"*
- Pediatric and Adult Interventional Cardiac Symposium (PICS-AICS, Las Vegas, NV, September 2021
  - Moderator – *Bioresorbable Technology Session*
  - Invited Faculty – *"Is there a role for PLLA or Magnesium Coronary Stents in Children"*
  - Invited Faculty – *Stratifying Fontan Risk by Per-Op Lymphatic Imaging*
  - Invited Faculty – *Complex Lymphatic Intervention (Dallas Case Example)*
- Children's Medical Center, Children's Health, Dallas, TX, September 2021
  - Heart Center Town Hall – *Innovative Cardiac Catheterization Programs*

## Conference Presentations

### SCMR (Society for Cardiovascular Magnetic Resonance) Virtual Scientific Sessions, February 2021

#### Greer J.

Oral Presentation, *"How We Use Real-Time MRI"*

#### Greil FG.

Oral Presentation, *"Coronary Imaging: Abnormal Origins and Kawasaki Disease"*

#### Greil FG, Hughes, M.

Moderator, *"Clinical Updates and Outcomes in Congenital CMR"*

## Other Conferences

#### Chabiniok R.

Functional Imaging and Modeling of Hear Conference, Virtual, June, 2021  
Oral Presentation, *"Biomechanical modeling for congenital heart diseases"*

## Education and Training

The Division is dedicated to the training of medical students, residents, and fellows.

### Medical Students

- Third-Year Pediatric Rotations:
  - Cardiology inpatient rotations with three medical students throughout the year
  - Pediatric Cardiology Clinic Days

- Fourth-Year Electives in Pediatric Cardiology:
  - Cardiac Outpatient Clinic Rotation
  - Cardiac Intensive Care Unit Rotation
  - Cardiac Imaging Rotation (MRI, CT, echocardiography)

## Residents

The Division of Pediatric Cardiology plays a major role in the training of pediatric residents. Training occurs at many levels.

- Inpatient Training:
  - Three interns and one senior resident typically participate on the cardiology inpatient service, caring for patients on a 22-bed cardiology floor with the supervision of the attending cardiologist
  - An elective is available for residents to rotate in the Cardiac Intensive Care Unit and the transplant/heart failure service
- Outpatient Training:
  - One or two second- or third-year residents are able to do an elective in the Cardiology Outpatient Clinic under the supervision of the attending cardiologists

## Fellows

The Pediatric Cardiology fellowship currently accepts four trainees per year in the categorical program. Many fellows choose to complete a fourth year to pursue a specialized clinical interest. All pediatric cardiology faculty are actively involved in the fellows' training. In addition to the standard three-year Fellowship Program, we offer up to six qualified fellows additional fourth-year training programs in cardiac critical care, interventional cardiology, advanced cardiac imaging, fetal cardiology, electrophysiology, heart transplantation, preventive cardiology, prospective clinical research, and basic research. The structure of these experiences depends on the interests and skills of the individual fellow. Categorical fellows rotate through cardiac outpatient, acute care, critical care, preventive cardiology, adult congenital heart disease, cardiac catheterization, electrophysiology, echocardiography, MRI, and cardiac transplantation. They also spend up to one year participating in clinical, translational, or basic science research. The program provides fellows the training, tools, and philosophy necessary for advancing the field of pediatric cardiology within their areas of choice. All pediatric cardiology faculty members are actively involved in the fellows' training.

## Research Activities

Members of the Division of Pediatric Cardiology are engaged in multiple research projects to advance the care of children with heart disease.

### Basic Science

An exciting new area of investigation is the study of biomarkers during cardiac operations. This line of research could result in personalized care during cardiac operations. Cardiopulmonary bypass is also known to cause a systemic inflammatory response, but a clear understanding of the mechanisms is lacking. Using a mouse model of bypass, investigation is underway to evaluate biomarkers of injury.

Another new area of investigation is to optimize cardiovascular support therapy for pediatric patients with end stage heart failure. Currently the effect of ventricular assist devices on muscle cellular function is unknown. Work is underway to understand of muscle regeneration and remodeling in the setting of ventricular assist devices.

One additional pre-clinical research area is the optimization of technologies for imaging for cardiovascular and lymphatic intervention. In close cooperation with the Department of Radiology, faculty have access to the Advanced Imaging Research Center at UT Southwestern. This gives staff members access to novel cardiovascular research technology to contribute to existing research as well as opportunity to design their individual research projects.

### **Clinical Sciences**

The Pediatric Cardiology Division participates in multiple multicenter trials. In interventional catheterization, current trials are assessing various devices, including the use of novel pulmonary valves and device for closure of the patent ductus arteriosus in small infants.

The Division is both leading and contributing to many multicenter initiatives including Pediatric Acute Care Cardiology Collaborative (PAC<sup>3</sup>), Pediatric Cardiac Critical Care Consortium (PC<sup>4</sup>), and the Cardiac Neurodevelopmental Outcome Collaborative (CNOC). In particular, the Division is the primary sponsor of PAC<sup>3</sup>, a collaborative of over 40 international children's hospitals. Our focus on these collaboratives allows for the rapid translation of best practices to the bedside to optimize outcomes on behalf of our patients.

Multicenter efforts are also underway by our surgical and anesthesia teams to evaluate the use of ventricular assist devices in the pediatric population and the use of cold-stored platelets for improved performance in the operating room.

Collaborative studies within the Department of Pediatrics include protocols to evaluate stroke, migraine, pulmonary embolism and complications of sickle cell disease and childhood cancer.

Ongoing areas of research interest include epidemiologic studies of congenital heart disease, particularly within the state of Texas, imaging markers for cardiac transplant rejection, development of new techniques for pediatric cardiovascular MRI; 3D printing and modeling of congenital heart disease; and using innovative artificial intelligence, machine learning and computational modelling techniques, to improve monitoring of children with heart disease.

### **Clinical Activities**

The Pediatric Cardiology Division offers a comprehensive program of specialized care at the Heart Center at Children's Health<sup>SM</sup> for children and adults with congenital and acquired heart diseases. The Heart Center's team of professionals includes cardiologists, cardiac surgeons, cardiac intensivists, neonatologists, cardiac anesthesiologists, and psychologists. In addition to providing the highest quality clinical and surgical care, our faculty members are committed to improving the health of children everywhere by inspiring innovations and research.

### **Inpatient Services**

The inpatient service is divided between the Cardiac Intensive care Unit, inpatient cardiology consultation services, and acute care cardiology unit. The acute care cardiology and the cardiac intensive care units are highly specialized areas that provide advance care for post-surgical, post-transplant, and post cardiac catheterization patients. In addition, the units provide progressive care for medical patients with cardiovascular issues. We are expanding our inpatient programs at the Children's Health Plano campus to include cardiac catheterizations, telemetry, and the ability to care for cardiac patients with medical needs.

The typical combined daily census for both inpatient units is 40+ patients, while the consultation service follows approximately 20 patients across several centers with two to four new consultations a day.



## **Outpatient Services**

Approximately 12,000 cardiology outpatients are seen each year between the Heart Center main campus in Dallas, and the clinic in Plano. Subspecialty cardiology clinics, including heart transplantation, heart failure, muscular dystrophy, arrhythmia, pacemaker, preventive cardiology, Safe-at-Home (for post-op single ventricle, infants), aortopathy, cardiac genetics, Fontan, and adult congenital heart disease provide unique venues for referrals from throughout the region. Fetal echocardiography clinics continue to expand their services and clinic locations providing a minimum of four clinic days per week.

## **Preventive Cardiology Clinic**

The preventive cardiology clinic serves children with hyperlipidemia and hypercholesterolemia and children with metabolic syndrome (i.e., obesity, insulin resistance, increased triglycerides, decreased high-density lipoprotein, and hypertension) and sees an average of 1500 patients per year. A team of physicians, dietitians, and nurses provides comprehensive physical assessments and dietary evaluations for patients and their families, with the development of individualized programs, including Diet, Lifestyle modification, Treatments (including natural as well as prescription medications).

## **Pediatric Echocardiography Laboratory**

The pediatric echocardiography laboratory at Children's Health is Intersocietal Accreditation Commission (IAC) accredited for pediatric transthoracic, transesophageal, and fetal echocardiography. Six dedicated sub-specialty trained physicians staff the laboratory and provide coverage 24/7. The team consists of highly trained pediatric sonographers who perform approximately 12,500 studies a year and provides direct services for three primary hospitals and three outpatient sites. In addition, we provide support services for tele-echocardiography at three additional hospitals and four outreach clinics.

The laboratory offers the latest technology including fetal echocardiography, stress imaging, three dimensional and strain imaging and provides imaging support for the cardiac operating rooms, ECMO cannulation, and catheterization laboratory.

The laboratory has a strong track record of academic endeavors, including research on congenital coronary artery imaging, identification of rejection in transplanted hearts, imaging in postoperative patients and evaluation of single ventricle palliation. We have had successful research collaborations with other divisions in pediatrics including neonatology, hematology/oncology and neurology.

## **Fetal Heart Program**

Our fetal echocardiography program is IAC (Intersocietal Accreditation Commission) certified and performed approximately four hundred fetal echocardiograms and consultations in 2021. In concert with Pediatric Heart Specialists, the Heart Center's outreach and community focused cardiologists, the Division continues to expand accessibility. The fetal heart program expertly coordinates prenatal cardiac evaluation and counseling, as well as pre- and post-natal cardiac care to ensure critical congenital heart conditions receive the care, they need at precisely the right time. Comprehensive multidisciplinary consultations may include an imaging cardiologist, cardiac nurse, cardiothoracic surgeon, social work, intensive care cardiologist, electrophysiology nurse, neurodevelopmental psychologist, and introduction to our "safe at home" program for interstage single ventricle monitoring program.

Parental education and family support are our priorities. We support the Fetal Heart Society whose mission is to advance the field of fetal cardiovascular care and science through collaborative research, education, and mentorship, as well participating in the National Pediatric Cardiology Quality Improvement Collaborative (NPC-QIC) whose mission is to decrease mortality and

improve quality of life for all infants with single ventricle congenital heart disease. By supporting and engaging in multi-institutional research and quality improvement projects, we continually striving to improve the quality of our counseling and outcomes.

## Patient Statistics

The following statistics include patient visits for Children’s Medical Center Dallas and Children’s Medical Center Plano, as well as our outreach clinics in Abilene, Odessa and Tyler, and Telemedicine which is handled through the Outreach Group.

Cardiology Patient Procedures by Specialization and by Type by Year.

### Surgical Procedures

	2017	2018	2019	2020	2021
Cardiac Operations (Total)	519	730	845	618	519
ACHD Operations	30	46	48	31	26
Heart Transplant	18	26	20	24	19

### Diagnostic Testing and Cardiac Imaging

	2017	2018	2019	2020	2021
Electrocardiograms	16,684	12,584	18,511	19,957	22,421
Telemedicine EKGs				665	2,908
Echocardiograms (CMC, CUH, Pkld)	11,741	11,997	13,179	11,159	12,305
Telemedicine ECHOS				880	250
Fetal ECHO (total)	514	466	472	308	393
Fetal Echo – Dallas					215
Fetal Echo – Legacy					178
Holters	867	866	935	825	1,011
Telemedicine Holters				11	44
Cardiac MRIs	497	757	897	841	1,056
Cardiac CT					398
Stress Tests	168	201	173	160	236

### Cardiac Catheterization Procedures

	2017	2018	2019	2020	2021
Interventional Cardiac Caths	617	635	653	532	486
Biopsy Cardiac Caths	135	99	67	103	96
Diagnostic Cases	164	161	225	201	224
Cath/MRI Hybrid Cases	5	26	25	15	30
EP Studies & Ablation Procedures	84	80	98	141	150
Pacemaker, Event Recorder & Defibrillators	26	25	29	24	24

### Outpatient Clinic Patient Encounters

	2017	2018	2019	2020	2021
Dallas	9,108	9,260	9,376	8,268	9,154
Plano	2,462	2,806	3,090	2,379	2,830
Presbyterian-Dallas	106	173	186	129	152

## Current Grant Support

### Maria Bano

**Grantor:** University of Michigan/Enduring Hearts Inc.  
**Title of Project:** The impact of Fontan circulatory failure, frailty, and resilience on heart failure and transplant outcomes  
**Role:** Principal Investigator  
**Dates:** 01/2021 – 12/2022

### Ryan Butts

**Grantor:** Boston Children's Hospital  
**Title of Project:** Multicenter Randomized Trial of Everolimus in Pediatric Heart Transplantation  
**Role:** Principal Investigator  
**Dates:** 09/2017 – 09/2022

**Grantor:** Duke University/NIH-National Center For Advncg Trnsltnl  
**Title of Project:** Butts\_STeroids to REduce Systemic inflammation after neonatal heart Surgery (STRESS trial) Study  
**Role:** Principal Investigator  
**Dates:** 07/2017 – 6/2022

**Grantor:** Hospital For Sick Children  
**Title of Project:** Butts - SickKids - Development of a Risk Calculator to Predict Sudden Cardiac Death in Children with Hypertrophic Cardiomyopathy  
**Role:** Principal Investigator  
**Dates:** 04/2017 – 03/2025

**Grantor:** Stanford University/Enduring Hearts Inc.  
**Title of Project:** Evaluation of contribution of HLA type and HLA antibodies in Survival after Pediatric Heart Transplantation  
**Role:** Principal Investigator  
**Dates:** 01/2021 – 12/2022

### Radomir Chabiniok

**Grantor:** Inria France  
**Title of Project:** Inria-UTSW Medical Center Dallas Associated Team: Modeling for Tetralogy of Fallot  
**Role:** Principal Investigator  
**Dates:** 2018-2022

**Grantor:** Czech Ministry of Health  
**Title of Project:** Analysis of flow character and prediction of evolution in endovascular treated arteries by magnetic resonance imaging coupled with mathematical modeling  
**Role:** Collaborator/mentor  
**Dates:** 2018-2022

### Tarique Hussain

**Grantor:** Communities Foundation of Texas  
**Title of Project:** Computational Modeling for Tetralogy of Fallot  
**Role:** Principal Investigator (Co-Investigators: **G. Greil, A. Tandon, S. Reddy**, R. Jaquiss)  
**Dates:** 09/2020 – 9/2023

**Grantor:** National Science Foundation  
**Title of Project:** Virtual Reality System to Plan Cardiovascular Interventions  
**Role:** Principal Investigator (Co-Investigators: **A. Tandon**, B. Lang)  
**Dates:** 09/2018 – 02/2022

**Grantor:** NIH-National Heart, Lung And Blood Inst  
**Title of Project:** Functional Characterization of Children with Chronic Thromboembolic Disease  
**Role:** Co-Investigator  
**Dates:** 09/2020 – 08/2021

**Grantor:** Novartis Corp  
**Title of Project:** An multicenter, open-label study on CZ696  
**Role:** Principal Investigator  
**Dates:** 07/2017 – 7/2022

**Grantor:** W. B. & Ellen Gordon Stuart Trust  
**Title of Project:** Improving Treatment and Outcomes for Childhood Survivors of Tetralogy of Fallot: Computational Modeling in Preventive Cardiology  
**Role:** Principal Investigator (Co-Investigators: **G. Greil**, **A. Tandon**, **S. Reddy**, R. Jaquiss)  
**Dates:** 09/2020 – 9/2023

### **Catherine Ikemba**

**Grantor:** Fetal Heart Society  
**Title of Project:** Fetal anatomy and physiology and associations with fetal and perinatal outcomes in D-transposition of the great arteries with intact ventricular septum: a collaborative, multicenter, multi-arm prospective study  
**Role:** Principal Investigator  
**Dates:** 02/2019 – 06/2022

### **Lynn Mahony**

**Grantor:** New England Research Institutes/ NIH-National Institutes of Health  
**Title of Project:** Pediatric Heart Disease Research Network  
**Role:** Principle Investigator; Steering Committee Chair  
**Dates:** 01/2021 – 12/2022

### **Kavita Sharma**

**Grantor:** New England Research Institutes/NIH-National Heart, Lung And Blood Inst  
**Title of Project:** The NIH Longitudinal Study for Multisystem Inflammatory Syndrome (MUSIC)  
**Role:** Principle Investigator  
**Dates:** 10/2020 – 07/2025

**Grantor:** University of California San Diego/Patient-Centered Outcomes Research Inst  
**Title of Project:** Kawasaki Disease Comparative Effectiveness Trial  
**Role:** Principal Investigator  
**Dates:** 01/2017 – 08/2021

### **Surendranath Veeram Reddy**

**Grantor:** NIH-National Institute Of Ddk Diseases  
**Title of Project:** Consequences of Elevated Fibroblast Growth Factor 23 in the Presence and Absence of Kidney Disease  
**Role:** Co-Investigator  
**Dates:** 07/2018 – 06/2023

**Grantor:** Pediatric Scientist Development Program (K12)

**Title of Project:** Genesis of Pulmonary Arteriovenous Malformations After Diversion of Hepatic Venous Flow: "Identifying the Role of Hepatic BMPs"

**Role:** Faculty Sponsor/Mentor (PI-Steve Spurgin, MD)

**Dates:** 07/2021 – 06/2023

## Peer-Reviewed Publications

1. Akam-Venkata J, **Lemler M**, Pirolli T, Thankavel P, **Ikemba C**. [Evolution of Interventricular Septal Hematoma: Echocardiographic Diagnosis](#). *CASE (Phila)*. 2021 Feb;5(1):39-42. PMID:33644512
2. Anton CM, Drake MB, **Butts RJ**, Cao T, Rezaeizadeh A, Trivedi MH, Triplett KN. [Electronic Mental Health Screening in a Pediatric Heart Failure and Transplant Clinic](#). *J Clin Psychol Med Settings*. 2021 Dec;28(4):815-825. PMID:33772706
3. **Arar Y**, **Hussain T**, Abou Zahr R, Gooty V, **Greer JS**, Huang R, Hernandez J, King J, **Greil G**, **Veeram Reddy SR**. [Fick versus flow: a real-time invasive cardiovascular magnetic resonance \(iCMR\) reproducibility study](#). *J Cardiovasc Magn Reson*. 2021 Jul 19;23(1):95. PMID:34275477 PMCID: PMC8287667.
4. Bates K, Connelly C, Khadr L, Graupe M, Hlavacek A, Morell E, Pasquali S, Russell J, Schachtner S, Strohacker C, Tanel R, Ware A, Wooton S, **Madsen NL**, Kipps A. [Successful Reduction of Postoperative Chest Tube Duration and Length of Stay After Congenital Heart Surgery: A Multicenter Collaborative Improvement Project](#). 2021 Nov; 10(21): e020730. DOI: 10.1161/JAHA.121.02030. PMID: 34713712. PMCID: PMC8751825
5. Budts W, Miller O, Babu-Narayan SV, Li W, Valsangiacomo Buechel E, Frigiola A, van den Bosch A, Bonello B, Mertens L, **Hussain T**, Parish V, Habib G, Edvardsen T, Geva T, Roos-Hesselink JW, Hanseus K, Dos Subira L, Baumgartner H, Gatzoulis M, Di Salvo G. [Imaging the adult with simple shunt lesions: position paper from the EACVI and the ESC WG on ACHD. Endorsed by AEPC \(Association for European Paediatric and Congenital Cardiology\)](#). *Eur Heart J Cardiovasc Imaging*. 2021 May 10;22(6):e58-e70. PMID:33338215
6. **Butts R**, Atz AM, **Baez Hernandez N**, Sutcliffe D, Reisch J, **Mahony L**. [Carvedilol Does Not Improve Exercise Performance in Fontan Patients: Results of a Crossover Trial](#). *Pediatr Cardiol*. 2021 Apr;42(4):934-941. PMID:33585998
7. **Butts RJ**, **Baez Hernandez N**, Kirk R, **Bano M**, Davies R. [Center Donor Refusal Rate Is Associated With Worse Outcomes After Listing in Pediatric Heart Transplantation](#). *Transplantation*. 2021 Sep 1;105(9):2080-2085. PMID:33148979
8. Castellanos DA, Škardová K, Bhattaru A, Berberoglu E, **Greil G**, Tandon A, Dillenbeck J, Burkhardt B, **Hussain T**, Genet M, **Chabiniok R**. [Left Ventricular Torsion Obtained Using Equilibrated Warping in Patients with Repaired Tetralogy of Fallot](#). *Pediatr Cardiol*. 2021 Aug;42(6):1275-1283. PMID:33900430
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## Invited Reviews

- **Invited Review: Veeram Reddy SR, Welch TR, Nugent AW.** (2021). [Biodegradable Stent Use For Congenital Heart Disease](#). In press. *Progress in Pediatric Cardiology* (pp. 101349). Elsevier.