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Advancing Children's Healthcare Research through the Project K: Legacy Grant

Jenny E. Zablah MD, FSCAI, FACC, FPICS, FAAP; Sanjay Daluvoy, MD, FACS; Pratheepan Gulasekaram, JD; Mickie Okamoto, MPA

Cutting-edge research, contributing to advancing technology, healing under-resourced children, and bringing people together. These were the qualities that defined the professional and personal ethic of the late Dr. Kanishka Ratnayaka, internationally renowned pediatric interventional cardiologist. Dr. Ratnayaka served as the director of the new Dickinson Image-Guided Intervention Center and co-director of research at the Heart Institute at Rady Children's Hospital-San Diego and as Clinical Professor of Pediatrics at UC San Diego School of Medicine, after a lengthy tenure as an interventional pediatric cardiologist at Children's National Medical Center. During that time, he was also a researcher at the National Institutes of Health, where his path breaking work on MRI-based imaging paved the way for earlier detection of disease while reducing radiation exposure for pediatric patients. His research yielded more than fifty peer-reviewed articles and several patents for novel cardiovascular devices.



Dr. Kanishka Ratnayaka



Dr. Kanishka Ratnayaka guiding Dr. Lubega Sulaiman at the Ugandan Heart Institute

Dr. Ratnayaka was also a relentless advocate for children who lacked resources and access to healthcare. In the course of his career, he donated his time and expertise traveling to countries in Africa and Asia to train other pediatric cardiologists, and transforming the lives of thousands of children. Foundational to philanthropic work was his creation of the non-profit organization, World Children's Initiative (WCI) in 2005. Along with his two close friends, Dr. Sanjay Daluvoy (Plastic & Reconstructive Surgeon in Raleigh, NC) and Pratheepan Gulasekaram (Professor of Law, Univ. of Colorado), Dr. Ratnayaka founded WCI to improve healthcare access and infrastructure for children in developing areas domestically and worldwide. As a capstone of his work with WCI, Dr. Ratnayaka led the design of the Uganda Heart Institute's pediatric catheterization lab, and trained the local physicians who now perform hundreds of interventional procedures



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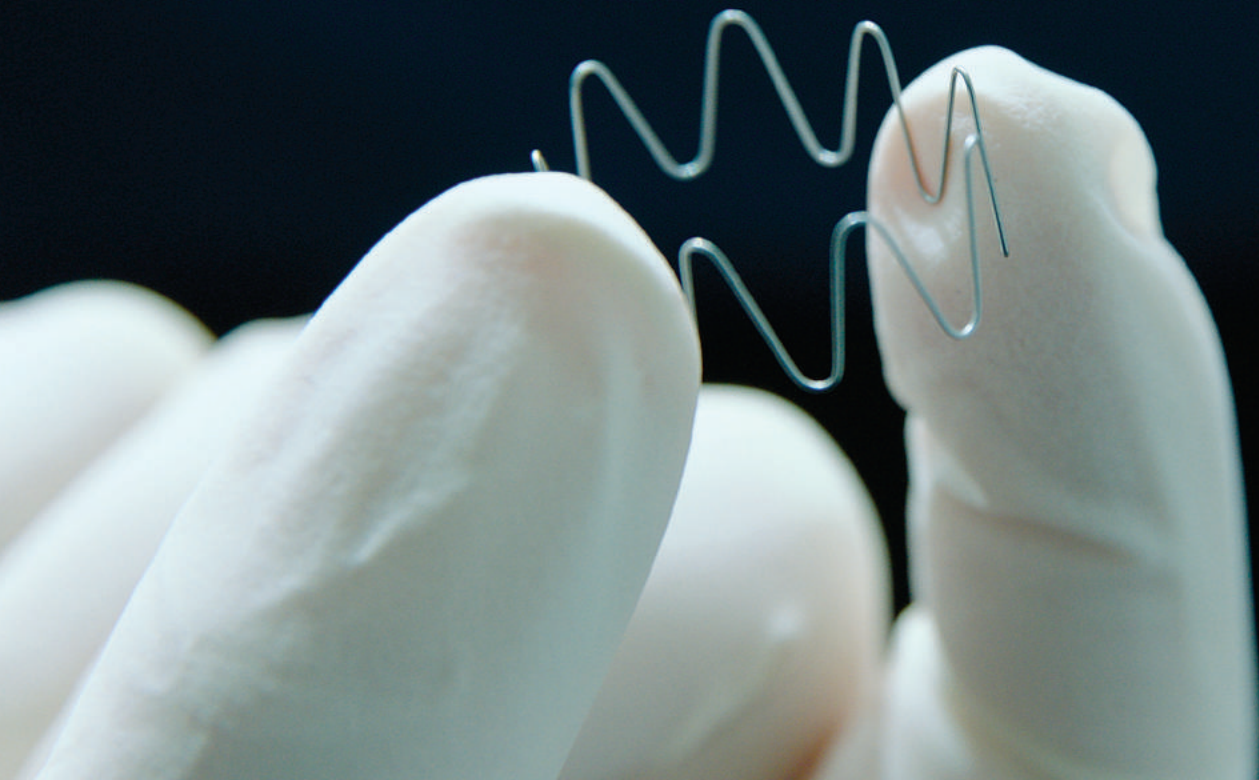
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The following are contraindications for the use of this device: active bacterial endocarditis or any other active infections, known intolerance to Nitinol (titanium or nickel), or an anticoagulation/antiplatelet regimen.

Warnings

General: Implantation of the Harmony TPV system should be performed only by physicians who have received Harmony TPV system training. The transcatheter pulmonary valve (TPV) is to be used only in conjunction with the Harmony delivery catheter system (DCS). This procedure should only be performed where emergency pulmonary valve surgery can be performed promptly. Do not use any of the Harmony TPV system components if any of the following has occurred: it has been dropped, damaged, or mishandled in any way, or if the use-by date has elapsed.

Transcatheter pulmonary valve (TPV): This device was designed for single use only. Do not reuse, reprocess, or resterilize the TPV. Reuse, reprocessing, or resterilization may compromise the structural integrity of the device and/or create a risk of contamination of the device, which could result in patient injury, illness, or death. Do not resterilize the TPV by any method. Exposure of the device and container to irradiation, steam, ethylene oxide, or other chemical sterilants renders the device unfit for use. The device is packaged with a temperature sensor. Do not freeze the device. Do not expose the device to extreme temperatures. Do not use the device if the arrow on the sensor points to the symbol that indicates that the temperature limit has been exceeded. Do not use the device if any of the following have occurred: the tamper-evident seal is broken, the serial number tag does not match the container label, the arrow on the sensor points to the symbol that indicates that the temperature limit has been exceeded, or the device is not completely covered by the storage solution. Do not contact any of the Harmony TPV system components with cotton or cotton swabs. Do not expose any of the Harmony TPV system components to organic solvents, such as alcohol. Do not introduce air into the catheter. Do not expose the device to solutions other than the storage and rinse solutions. Do not add or apply antibiotics to the device, the storage solution, or the rinse solution. Do not allow the device to dry. Maintain tissue moisture with irrigation or immersion. Do not attempt to repair a damaged device. Do not handle the valve leaflet tissue or use forceps to manipulate the valve leaflet tissue. Do not attempt to recapture the device once deployment has begun. Do not attempt to retrieve the TPV if any one of the outflow TPV struts is protruding from the capsule. If any one of the outflow TPV struts has deployed from the capsule, the TPV must be released from the catheter before the catheter can be withdrawn. Do not attempt post-implant balloon dilatation (PID) of the TPV during the procedure, which may cause damage to or failure of the TPV leading to injury to the patient resulting in reintervention.

Delivery catheter system (DCS): This device was designed for single use only. Do not reuse, reprocess, or resterilize the DCS. Reuse, reprocessing, or resterilization may compromise the structural integrity of the device and/or create a risk of contamination of the device, which could result in patient injury, illness, or death. Do not reuse or resterilize the DCS. If resistance is met, do not advance the guidewire, DCS, or any other component without first determining the cause and taking remedial action. Do not remove the guidewire from the DCS at any time during the procedure.

Precautions

General: Clinical long-term durability has not been established for the Harmony TPV. Evaluate the TPV performance as needed during patient follow-up. The safety and effectiveness of Harmony TPV implantation in patients with pre-existing prosthetic heart valve or prosthetic ring in any position has not been demonstrated. The Harmony TPV system has not been studied in female patients of child-bearing potential with positive pregnancy.

Before use: Exposure to glutaraldehyde may cause irritation of the skin, eyes, nose, and throat. Avoid prolonged or repeated exposure to the chemical vapor. Use only with adequate ventilation. If skin contact occurs, immediately flush the affected area with water (for a minimum of 15 minutes) and seek medical attention immediately. The TPV and the glutaraldehyde storage solution are sterile. The outside of the TPV container is nonsterile and must not be placed in the sterile field. The TPV and DCS should be used only in a sterile catheterization laboratory (cath lab) environment. Ensure that sterile technique is used at all times. Strictly follow the TPV rinsing procedure. For TPV 25: Ensure that all green sutures have been removed from the attachment suture loops on the TPV before loading onto the DCS. Prevent contamination of the TPV, its storage solution, and the DCS with glove

powder. Verify the orientation of the TPV before loading it onto the DCS. The inflow end of the TPV with attachment suture loops must be loaded first. Do not place excessive pressure on the TPV during loading. Inspect the sealed DCS packaging before opening. If the seal is broken or the packaging has been damaged, sterility cannot be assured. Proper functioning of the DCS depends on its integrity. Use caution when handling the DCS. Damage may result from kinking, stretching, or forceful wiping of the DCS. This DCS is not recommended to be used for pressure measurement or delivery of fluids. Carefully flush the DCS and maintain tight DCS connections to avoid the introduction of air bubbles.

During use: The TPV segment is rigid and may make navigation through vessels difficult. Do not advance any portion of the DCS under resistance. Identify the cause of resistance using fluoroscopy and take appropriate action to remedy the problem before continuing to advance the DCS. Careful management of the guidewire is recommended to avoid dislodgement of the TPV during DCS removal. Once deployment is initiated, retrieval of the TPV from the patient is not recommended. Retrieval of a partially deployed valve may cause mechanical failure of the delivery catheter system or may cause injury to the patient. Refer to the section below for a list of potential adverse events associated with Harmony TPV implantation. During deployment, the DCS can be advanced or withdrawn prior to the outflow struts protruding from the capsule. Once the TPV struts contact the anatomy during deployment, it is not recommended to reposition the device. Advancing the catheter forward once the TPV struts make contact with the anatomy may lead to an undesired deployment or may cause damage to or failure of the TPV and injury to the patient. Refer to the section below for a list of potential adverse events associated with the Harmony TPV implantation. Physicians should use judgment when considering repositioning of the TPV (for example, using a snare or forceps) once deployment is complete. Repositioning the bioprosthesis is not recommended, except in cases where imminent serious harm or death is possible (for example, occlusion of the main, left, or right pulmonary artery). Repositioning of a deployed valve may cause damage to or failure of the TPV and injury to the patient. Refer to the section below for a list of potential adverse events associated with the Harmony TPV implantation. Ensure the capsule is closed before DCS removal. If increased resistance is encountered when removing the DCS through the introducer sheath, do not force passage. Increased resistance may indicate a problem and forced passage may result in damage to the device and harm to the patient. If the cause of resistance cannot be determined or corrected, remove the DCS and introducer sheath as a single unit over the guidewire, and inspect the DCS and confirm that it is complete. If there is a risk of coronary artery compression, assess the risk and take the necessary precautions. Endocarditis is a potential adverse event associated with all bioprosthetic valves. Patients should make their healthcare providers aware that they have a bioprosthetic valve before any procedure. Post-procedure, administer appropriate antibiotic prophylaxis as needed for patients at risk for prosthetic valve infection and endocarditis. Prophylactic antibiotic therapy is recommended for patients receiving a TPV before undergoing dental procedures. Post-procedure, administer anticoagulation and/or antiplatelet therapy per physician/clinical judgment and/or institutional protocol. Excessive contrast media may cause renal failure. Preprocedure, measure the patient's creatinine level. During the procedure, monitor contrast media usage. Conduct the procedure under fluoroscopy. Fluoroscopic procedures are associated with the risk of radiation damage to the skin, which may be painful, disfiguring, and long term.

Potential Adverse Events

Potential risks associated with the implantation of the Harmony TPV may include, but are not limited to, the following:

- death
- valve dysfunction
- tissue deterioration
- hematoma
- heart failure
- cerebrovascular incident
- perforation
- rupture of the right ventricular outflow tract (RVOT)
- compression of the aortic root
- compression of the coronary arteries
- sepsis
- pseudoaneurysm
- erosion
- stent fracture
- arrhythmias
- device embolization or migration
- pulmonary embolism
- occlusion of a pulmonary artery
- laceration or rupture of blood vessels
- device misorientation or misplacement
- valve deterioration
- regurgitation through an incompetent valve
- physical or chemical implant deterioration
- paravalvular leak
- valve dysfunction leading to hemodynamic compromise
- residual or increasing transvalvular gradients
- progressive stenosis and obstruction of the implant
- hemorrhage
- endocarditis
- thromboembolism
- thrombosis
- thrombus
- intrinsic and extrinsic calcification
- bleeding
- bleeding diathesis due to anticoagulant use
- fever
- pain at the catheterization site
- allergic reaction to contrast agents
- infection
- progressive pulmonary hypertension
- progressive neointimal thickening and peeling
- leaflet thickening
- hemolysis. General surgical risks applicable to transcatheter pulmonary valve implantation:
- abnormal lab values (including electrolyte imbalance and elevated creatinine)
- allergic reaction to antiplatelet agents, contrast medium, or anesthesia
- exposure to radiation through fluoroscopy and angiography
- permanent disability.

Please reference the Harmony TPV system instructions for use for more information regarding indications, warnings, precautions, and potential adverse events.

CAUTION: Federal law (USA) restricts these devices to the sale by or on the order of a physician.

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2023 Project K: Legacy Grant check presentation to Dr. Jenny Zablah and Dr. Gareth Mortan at Children's Hospital Colorado. Check presented by (left to right) Dr. Amy Dewar, Dr. Sanjay Daluvoy, Pratheepan Gulasekaram and Dr. Kanishka Ratnayaka's children.

on children without foreign assistance. Tragically, Dr. Ratnayaka passed away in 2021, the untimely victim of colorectal cancer.

To honor his dedication to his craft and to serving the underserved, WCI created the Project K: Legacy Grant. Named for the affectionate moniker used by his close friends ("K"), the grant seeks to recognize and promote the work of an individual who embodies Dr. Ratnakaya's commitment to cutting-edge research with the potential to improve healthcare access for children. In September 2023, WCI awarded the inaugural The Project K: Legacy Grant in the amount of \$39,000 to Dr. Jenny Zablah at Children's Hospital Colorado.

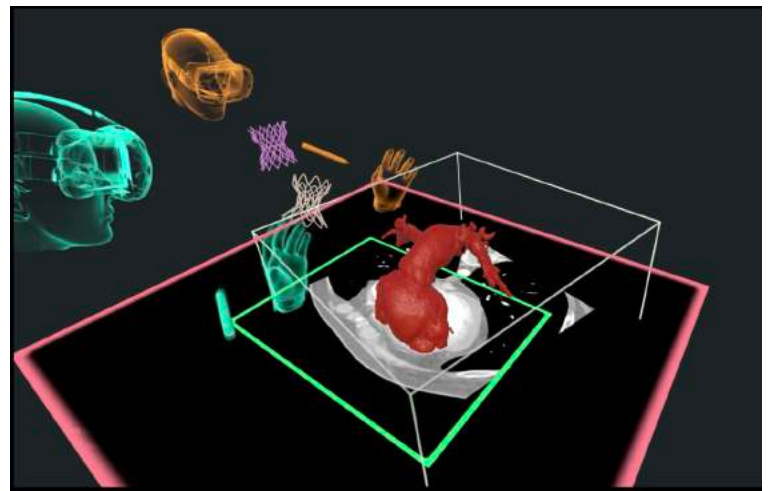
First Project Funded by The Project K: Legacy Grant

In 2019, Dr. Jenny Zablah established the Cardiac Catheterization Laboratory Advanced Imaging Program at Children's Hospital Colorado. This program has successfully devised and implemented a sustainable workflow for 3D printing, specifically tailored for patient education and procedural planning. Furthermore, it has seamlessly incorporated fusion imaging and 3D rotational angiography (3DRA) as routine practices within the cardiac catheterization laboratory, resulting in notable reductions in radiation doses, contrast volumes, and procedural times.

Since 2020, Extended Reality has become a big part of the program with partnership with software developers that have now come a long way since then, with Congenital Heart Disease specific tools that allow not only case planning but also patient and family education. This clinical and educational approach aligns with the vision of Dr. Ratnayaka's legacy work.



Dr. Jenny Zablah using Virtual Reality Headset



Multicener collaboration in virtual reality

The research project being supported by the WCI Project K: Legacy Grant is a prospective study with several sub-studies, evaluating the benefit of virtual and augmented reality from the planning to the procedural guidance and performance of transcatheter and surgical cardiac procedures like: Transcatheter Pulmonary Valve Implantation, Sinus Venous Defect Percutaneous Closure, Left Ventricular Assist Device Implantation and Surgical Patches Design. The specific aims of the study include:

1. To evaluate the feasibility and accuracy of virtual reality (VR) for procedural planning.
2. To develop a reproducible workflow for VR planning of common transcatheter procedures in vendor neutral softwares.
3. To determine the influence of VR for procedural planning on radiation exposure, complications, and procedure time.
4. To explore the use of VR for training and for the continuing education of physicians.

The project includes multiple specialties and researchers in different levels of training to augment the impact of the project. Participants in our project include congenital interventional cardiologists, cardiothoracic surgeons, pediatric cardiology/ cardiac catheterization fellows, modern human anatomy master students and medical students.



Using Augmented Reality Intraoperative

Immediate Impact of the Legacy Grant in the VR Project

Thanks to the generosity of WCI and their Project K: Legacy Grant, the project received complete funding, enabling the initiation of five concurrent projects. In support of these endeavors, essential equipment has been procured, including a state-of-the-art computer and additional virtual reality (VR) headsets. The acquisition of these resources is aimed at providing additional workstations for our students and researchers, thereby expanding capacity for in-depth studies.

Furthermore, this grant affords students the opportunity to secure financial support for travel, enabling them to present their research at conferences and actively promote the work. This aligns seamlessly with Dr. Ratnayaka's vision, which extends beyond the enhancement of imaging techniques in the cathlab with reduced radiation. It also underscores the commitment to empowering new generations and elevating the standards of education in our field.

Commenting on Dr. Zablah's selection for the grant, WCI Founder and President Dr. Daluvoy reflected, "Her research and commitment parallel the ideals Kanishka stood for. I'm sure he would have been truly excited to support her work." Speaking directly to Dr. Zablah's VR innovations, Dr. Daluvoy noted that it is "hard for children and their parents to understand what a hole in the heart means. Seeing it in virtual reality is both a powerful way for physicians to explain what's going on and allows them to simulate treatment plans and plan procedures." Important to legacy grant, both Drs. Zablah and Daluvoy expressed optimism at the promise of VR technology for planning, collaborating, and

treating the vulnerable populations that so deeply motivated Dr. Ratnayaka.

More than just honoring Dr. Ratnayaka, the award presentation reflected his warmth and spirit. Joining Dr. Daluvoy and Professor Gulasekaram were Dr. Ratnayaka's widow (Dr. Amy Dewar) as well his young children, his brother and his infant nephews. The ceremony at Colorado Children's Hospital provided them with a chance to hear about their father's brilliance, charisma, and selflessness, as well as an opportunity to play with and experience the VR technology used by Dr. Zablah. The award ceremony itself and its celebrant, Dr. Zablah, exemplified WCI's and Dr. Ratnayaka's credo to help children "Live Longer and Play Harder."

Inquiries about supporting future grant cycles or applying for WCI's Project K: Legacy Grant can be directed to info@wciprojects.org. For more information regarding Dr. Zablah's VR research, please direct inquiries to Jenny.zablah@childrenscolorado.org.

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The Congenital Heart Collaborative (TCHC), an affiliation between University Hospitals Rainbow Babies & Children's Hospital (Cleveland OH) and Nationwide Children's Hospital (NCH, Columbus OH) heart programs, seeks candidates in **Pediatric Cardiology** for a faculty position in our expanding group at UH Rainbow Babies & Children's Hospital. The successful candidate will join a group of physicians that model teamwork, collaboration and dedication to their patients and partners and be a part of an innovative clinical and educational program, representing the section in the community, nationally, and internationally. The Section consists of nine board-certified pediatric cardiologists including interventionalists, electrophysiologist, advanced imaging cardiologists, fetal cardiologists, general cardiologist, and 2 cardiovascular surgeons. This position is to replace a vacancy created by a relocating faculty member. The candidate will have opportunities to participate in quality improvement initiatives, clinical research, education of medical students, residents, and fellows and clinical time devoted to imaging, outpatient and inpatient care, including outreach clinic sessions.

Qualified applicants must have an MD, DO or MD/PhD degree, be BE/BC in Pediatric Cardiology. The rank and appointment will be commensurate with the candidate's credentials and experience.

The successful candidate will be well-supported at a world-class children's hospital that has over 60 years of experience in the care of pediatric and ACHD patients; an outstanding educational and research enterprise at Case Western Reserve University School of Medicine, and an internationally recognized program partner with the NCH Heart Center. TCHC is a dedicated service line with a common executive administration and functions as one program on two campuses with the commitment to expand access to high-quality comprehensive cardiac care along with a scholarly and educational mission. TCHC provides excellent cardiothoracic surgical, interventional, electrophysiologic, and non-invasive services.

Please send letter and curriculum vitae to **Harinder Singh, MD**, Section Chief, Pediatric Cardiology at Rainbow Babies & Children's Hospital, harinder.singh@uhhospitals.org. In employment, as in education, Case Western Reserve University is committed to equal opportunity and diversity. Women, veterans, members of underrepresented minority groups and individuals with disabilities are encouraged to apply.

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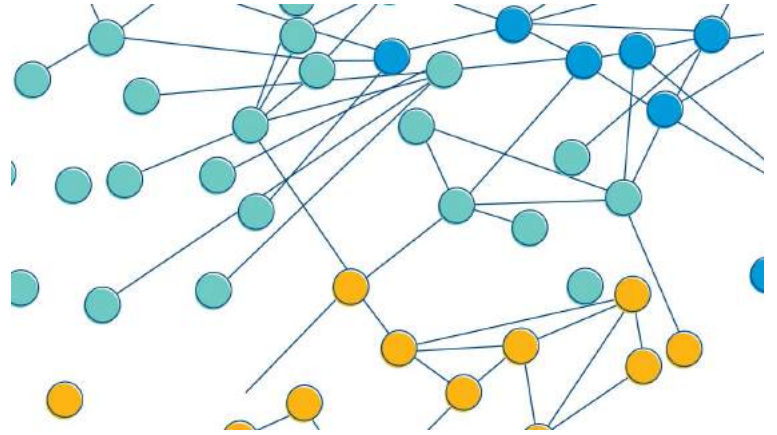


Speeding Up Cardiac Disease Research with Big Data

How Can Adopting Big Data Strategies From the Business World Help the Medical Field Advance Research?

Benjamin Frank, MD & Jesse Davidson, MD, MPH

The business world has used big data to drive decisions for years. Now, doctors are bringing this approach from the board room to the lab bench, using data to inform research questions. Investigators in Children's Hospital Colorado's Heart Institute, childrenscolorado.org/doctors-and-departments/departments/heart/, are using big data and multiomics profiling as a launchpad to uncover new information and hypotheses about pediatric heart disease. This technique can point researchers toward new areas of study and accelerate the research process to impact patients faster. As Ben Frank, MD, puts it, "Sometimes you don't know what you don't know until you find it."



Inductive Research Approach for Cardiac Research

Jesse Davidson, MD, and his team started exploring this inductive research approach at Children's Colorado in 2018 with a metabolic profiling study of infants under four months old who underwent cardiothoracic surgery. At the time, Dr. Davidson says, this was one of the first major pediatric medical studies to use the data-driven approach. The team's work showed significant dysregulation in many of the metabolic pathways, pubmed.ncbi.nlm.nih.gov/30561257/, pointing them to areas of further research.

The big data process looks slightly different each time, but the research typically starts with blood tests. If Drs. Davidson and Frank are using a metabolomics approach, that means measuring anywhere from 200 to 250 biomarkers. If they are employing a proteomics approach, that involves measuring closer to over 1,500 markers in each patient. Then, the researchers plug that data into a machine-learning algorithm that sorts through what might be significant depending on how the researchers are dividing up the population they are studying, such as kids with heart disease compared to kids who do not have heart disease. The software can also help the team identify how the individual dysregulated metabolites and proteins fit into key biologic systems.

"Zooming out to see the truth can help you see things you weren't expecting," Dr. Davidson says. "Science has traditionally been a hypothesis-driven product. You make a hypothesis about a next experience, test that hypothesis, come up with more data, make your hypothesis, test that, etc. It has blinders on to just about everything else that's going on. It is extraordinarily challenging to work down a very linear path and expect that you'll know a lot about the rest of the system."

While Dr. Davidson says this more traditional, hypothesis-driven approach is still extremely important in the research process, using data to drive the hypotheses can account for more complexity.

As Dr. Davidson, Dr. Frank and their colleagues started seeing clinical research yield more complex and intricate data, they realized this type of big data approach would be ideal, especially for their work with patients with Single Ventricle Heart Disease. The team treats children with this condition regularly, so there's a trove of clinical data to analyze.

"There's a lot of room to do better, and there's a lot of room to help their lives, to help their survival and to help their day-to-day experience," Dr. Frank says. "We are at a unique and powerful moment to be at the forefront of trying to figure out how to leverage this new data, and how to use it to help kids."

Dr. Davidson agrees: "Cardiology and cardiac surgery are ripe for this reverse strategy. If you start with an inductive approach, are there ways to find smarter ways forward and also to speed up the discovery process?"

The Orchestra Behind Big Data Analytics

Big data analytics would not be possible without a team of experts working together across the University of Colorado (CU) Anschutz Medical Campus. For example, as part of this work, it was necessary to engage with statisticians, and CU is home to the Center for Innovative Design and Analysis — an invaluable tool for researchers partnering with biostatisticians,



Pediatric Cardiologist – Cardiac Multimodal Imaging Physician

The Division of Pediatric Cardiology at Inova LJ Murphy Children's Hospital is seeking candidates to join our dynamic and growing faculty. Inova LJ Murphy Children's Hospital is a quaternary care, academic children's hospital in Northern Virginia and is seeking a full-time pediatric cardiologist to serve as Medical Director of Non-Invasive Cardiovascular Imaging to support our rapidly growing team within Inova Children's Heart Center.

The Heart Center at INOVA L.J. Murphy Children's Hospital has been caring for the children of Northern Virginia and the Greater Washington Region for more than 30 years. Each year, the program is responsible for approximately 550 procedures. The program provides surgical repair of the most complex congenital heart defects, including hypoplastic left heart syndrome. In addition to providing care for children with complex congenital anomalies, the program provides a lifetime of care as part of the Inova Schar Heart and Vascular, which includes the Adult Congenital Program. Inova Children's Heart Center is a comprehensive team, including congenital cardiac surgery, outpatient cardiology, fetal cardiology, non-invasive cardiology, adult congenital cardiology, diagnostic and interventional catheterization, and electrophysiology and advanced heart failure therapies. The team includes 23 board-certified pediatric cardiologists, 8 pediatric cardiac intensivists, 3 pediatric cardiac surgeons and 17 advanced practice providers. With respect to non-invasive imaging, the division currently performs fetal, transthoracic, and transesophageal echocardiography, and partners with radiology on cMRI and CT scans.

Inova LJ Murphy Children's Hospital is a 226-bed children's hospital at Inova Fairfax Hospital medical campus, located in Northern Virginia. As the only dedicated children's hospital and pediatric heart center in Northern Virginia, we provide care in a welcoming environment that offers the latest in technical innovation in kid-friendly spaces. The children's hospital has a 108-bed, level IV Neonatal Intensive Care Unit with approximately 17,000 annual deliveries. The Pediatric Cardiac Intensive Care Unit and Acute Care Step-Down Unit are part of the Inova Children's Heart Center.

We are seeking a Board Certified/Eligible Pediatric Cardiologist committed to a career in Pediatric Cardiology with advanced training in pediatric multimodal imaging to join our growing and dynamic practice as Pediatric Cardiology Multimodal Imaging Leader. Our ideal candidate will be energetic, enthusiastic, and work effectively as part of a team. The candidate must be an outstanding clinician dedicated to the care of hospitalized children and their families, and an excellent advanced imager who works well with MRI/CT technicians and heart center care providers.

Responsibilities and Practice Details:

- The candidate should have a passion for advanced training in non-invasive and multimodal imaging while possessing professional, clinical, and leadership skills.
- Flexibility, strong communication and collaborative skills are key.
- This position will work with the Chief of Pediatric Cardiology and the leadership of the Inova Children's Heart Center to execute on yearly personal and programmatic goals focused on the fundamentals of extraordinary care: Safety, quality, patient experiences, access, and stewardship.
- This is a perfect position for the candidate that thrives in an environment that focuses on teamwork, collaboration and dedication to patients, families, and each other.
- Although patient care is our primary focus, education and research are also encouraged and supported with access to dedicated research professionals including a statistician, research manager, and research coordinators.

Position Highlights:

- Highly competitive salary with incentives
- Full Medical, dental and vision
- Generous PTO and paid time to attend CME
- Paid Parental Leave Program
- Located Northern Virginia

Requirements:

- Board-certified/eligible in Pediatric Cardiology
- Advanced training in cardiac MR and CT imaging
- Interested individuals should be board-certified in Pediatric Cardiology and able to obtain an unrestricted Virginia Medical License
- Eligible for faculty appointment at The University of Virginia School of Medicine

Inova Health System is an Equal Opportunity/Affirmative Action employer. All qualified applicants will receive consideration for employment without regard to age, color, disability, gender identity or expression, marital status, national or ethnic origin, political affiliation, pregnancy (including childbirth, pregnancy-related conditions and lactation), race, religion, sex, sexual orientation, veteran status, genetic information, or any other characteristics protected by law.

Interested Candidates should reach out to:
Mitchell Cohen, MD, FACC, FHRS, Mitchell.cohen@inova.org
Chief of Pediatric Cardiology, Co-Director of the Children's Heart Center



computational biologists and data scientists on complex data sets. Drs. Davidson and Frank also work closely with a team of research coordinators, research nurses and regulatory support teams.

“Sometimes I think Dr. Davidson and I are conductors of a big orchestra. Without all the instruments, though, you wouldn’t get any music,” Dr. Frank says. “That kind of collaborative, team-based approach has been essential to our success.”

This collaborative style of research allows the team to follow the path laid out by the data. Dr. Davidson and his team are taking this work one step further, by not just generating new hypotheses after analyzing the data, but also dedicating time and studies to test those new, specific hypotheses to see what they learn.

“I think that’s where Dr. Davidson has really led,” Dr. Frank says. “If you look at the machine-learning literature, there’s a lot out there about using these strategies to do hypothesis-generating studies in different populations, but there are fewer people who are pushing to take the next step: hypothesis-testing validation of their findings. That next step is the crucial piece to move our work closer to improving outcomes for kids at the bedside.”

Metabolomics and Phenotypic Approach

Dr. Davidson’s 2018 Journal of the American Heart Association study laid the groundwork for this type of data analysis research to blossom in the Heart Institute. Through that research, which took a metabolomic approach, Dr. Davidson and his team found a profound shift in the metabolic fingerprint of infants undergoing cardiothoracic surgery with cardiopulmonary bypass. They also noted a global deficiency in amino acid levels, which is a finding that can lead to quick, direct changes to the care patients receive and an area the team will focus on next.

The team also used metabolomic profiling in a 2022 paper in the American Journal of Renal Physiology, pubmed.ncbi.nlm.nih.gov/35532069/, where they explored acute kidney injury, a common cause of morbidity after congenital heart disease surgery. Using animal models, the researchers were able to identify novel evidence of dysregulated tryptophan catabolism, among additional findings, opening the door to explore these pathways for diagnostic and therapeutic targets.

In a 2023 Journal of the American College of Cardiology: Advances paper, pubmed.ncbi.nlm.nih.gov/36875009/, Dr. Frank analyzed how kids with single ventricle heart disease are different than other populations, such as those without heart disease, and how doctors can be more personalized in their approach to treating these children. The findings suggested an association between increased pre- and post-operative circulating methionine and tryptophan metabolite levels, as well as difficulty recovering from heart surgery. These three examples are just a handful of many research projects the Heart Institute team has conducted with this big data approach.

“I think taking the big data approach allows you to build this really deep phenotype of who these kids are at these different key, crucial moments of leverage in their life,” Dr. Frank says. “This type of approach really allows you to blend the acute and the chronic. It really allows you to ask questions about both how we can help you get through this moment of crisis in your life, and also when you are OK, how we can help you maintain that functional status? How can we make you feel even better than you thought was possible?”



This article was originally published by Children's Hospital Colorado;
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Pediatric Cardiologist - Noninvasive Imaging Director

The Division of Pediatric Cardiology at Inova L.J. Murphy Children's Hospital is seeking a full-time pediatric cardiologist to serve as Medical Director of Non-Invasive Cardiovascular Imaging to support our rapidly growing team within Inova Children's Heart Center.

The Heart Center at INOVA L.J. Murphy Children's Hospital has been caring for the children of Northern Virginia and the Greater Washington Region for more than 30 years. Each year, the program is responsible for approximately 550 procedures. The program provides surgical repair of the most complex congenital heart defects, including hypoplastic left heart syndrome. In addition to providing care for children with complex congenital anomalies, the program provides a lifetime of care as part of the Inova Schar Heart and Vascular, which includes the Adult Congenital Program. Inova Children's Heart Center is a comprehensive team, including congenital cardiac surgery, outpatient cardiology, fetal cardiology, non-invasive cardiology, adult congenital cardiology, diagnostic and interventional catheterization, and electrophysiology and advanced heart failure therapies. The team includes 23 board-certified pediatric cardiologists, 8 pediatric cardiac intensivists, 3 pediatric cardiac surgeons and 17 advanced practice providers. With respect to non-invasive imaging, the division currently performs fetal, transthoracic, and transesophageal echocardiography, and partners with radiology on cMRI and CT scans. A team of inpatient and outpatient dedicated congenital sonographers support the division. The Pediatric Noninvasive Imaging Lab (ICAEL accredited) at Inova Children's Hospital is the largest program in Virginia performing 11,000 outpatient and 2,600 inpatient echocardiograms per year.

Inova L.J. Murphy Children's Hospital is a 226-bed children's hospital at Inova Fairfax Hospital medical campus, located in Northern Virginia. As the only dedicated children's hospital and pediatric heart center in Northern Virginia, we provide care in a welcoming environment that offers the latest in technical innovation in kid-friendly spaces. The children's hospital has a 108-bed, level IV Neonatal Intensive Care Unit with approximately 17,000 annual deliveries. The Pediatric Cardiac Intensive Care Unit and Acute Care Step-Down Unit are part of the Inova Children's Heart Center.

We are seeking a Board Certified/Eligible Pediatric Cardiologist committed to a career in Pediatric Cardiology with advanced training in pediatric echocardiography to join our growing and dynamic practice as Echo (Noninvasive Imaging) Lab Director. Our ideal candidate will be energetic, enthusiastic, and work effectively as part of a team. The candidate must be an outstanding clinician dedicated to the care of hospitalized children and their families, and an excellent mentor for junior echo attendings.

Key Responsibilities:

- Professional responsibilities will include directing noninvasive imaging for the Pediatric Heart Center.
- Support and mentor junior and mid-career pediatric cardiology echo attendings within the Pediatric Heart Center.
- Support and mentor ultrasound technicians within the Pediatric Heart Center.
- The candidate should have advanced training in non-invasive imaging while possessing professional, clinical, and leadership skills.
- This position will work with the Chief of Pediatric Cardiology and the leadership of the Inova Children's Heart Center to execute on yearly personal and programmatic goals focused on the fundamentals of extraordinary care: Safety, quality, patient experiences, access, and stewardship.
- This is a perfect position for the candidate that thrives in an environment that focuses on teamwork, collaboration and dedication to patients, families, and each other.
- Although patient care is our primary focus, education and research are also encouraged and supported with access to dedicated research professionals including a statistician, research manager, and research coordinators.

Position Highlights:

- Highly competitive salary with incentives
- Full Medical, dental and vision
- Generous PTO and paid time to attend CME.
- Paid Parental Leave Program
- Located Northern Virginia

Requirements:

- Board-certified/eligible in Pediatric Cardiology
- Interested individuals should be board-certified in Pediatric Cardiology and able to obtain an unrestricted Virginia Medical License.
- The ideal candidate will have extensive experience (5+ years) in the field, specifically in echocardiography (TTE, TEE, strain analysis and 3D imaging)
- Preference will be given to those with experience at higher volume centers and demonstrated leadership roles in imaging.
- Additional preference will be given to those with previous experience or education in medical administration and those who have clinical research experience.
- Eligible for faculty appointment at The University of Virginia School of Medicine

Inova Health System is an Equal Opportunity/Affirmative Action employer. All qualified applicants will receive consideration for employment without regard to age, color, disability, gender identity or expression, marital status, national or ethnic origin, political affiliation, pregnancy (including childbirth, pregnancy-related conditions, and lactation), race, religion, sex, sexual orientation, veteran status, genetic information, or any other characteristics protected by law.

Interested Candidates should reach out to:

Mitchell Cohen, MD, FACC, FHRS, Mitchell.cohen@inova.org
Chief of Pediatric Cardiology, Co-Director of the Children's Heart Center



Congenital Track at 2024 SCAI Scientific Sessions Offers Learning, Development, and Connection

Gavin Stern, MPH, MS, Director of Public Relations & Communications, SCAI

Every year, SCAI Scientific Sessions brings together the interventional cardiology community from around the world to share the latest clinical data, procedural guidance, and advanced expertise. This year's conference has lots to offer for those specializing in Congenital Heart Disease treatments, with more than 15 sessions offered in the program's Congenital Heart Disease Track.

"With the rapid development of new transcatheter devices and techniques for treating Congenital Heart Disease, I'm excited about this year's program," said SCAI's Congenital Heart Disease Program Chair, Dr. David T. Balzer, MD, MSCAI. "The sessions and live cases will focus on a broad range of topics, beginning with the basics (invasive hemodynamics) and progressing to the more unusual (i.e., interventions in middle aortic syndrome). In addition, we will cover many of the hottest topics in interventional cardiology."

The track is dedicated to congenital interventional cardiology and will employ didactic and case-based sessions to enhance expertise through collaborative and interactive learning. Attendees will acquire take-home knowledge for navigating complex cases, maximizing procedural success, and minimizing complications.

"SCAI has been a very strong proponent of Congenital Heart Disease and interventions. The congenital track at the Annual Scientific Sessions provides an excellent opportunity for congenital cardiologists to receive updates on cutting edge Imaging, interventions, currently available and upcoming devices," added Dr. Zahid Amin, MD, MSCAI, FAHA, Associate Chair of the Congenital Heart Disease program. "Industry representatives and stakeholders are onsite to discuss future endeavors and carve pathway for future improvement in this field."

In addition to educational sessions, attendees can look forward to live cases, scientific and clinical research abstracts, a poster competition, SCAI Women in Innovation, the Fellows Summit for Complex Cases, an international case exchange, and a special induction ceremony for those receiving the MSCAI and FSCAI honors.

The congenital heart disease track in 2024 focuses on:

- Invasive physiology.
- PDA stenting in ductal-dependent pulmonary blood flow.
- Complex Congenital Heart Disease cases.
- Tricuspid valve interventions.
- Pulmonary vein stenosis.
- Pulmonary valve implantation.
- Atrial septal interventions.
- Unusual interventions in CHD.
- An 'I blew it session' of case-based discussions of complications during CHD interventions.

"Prepare to be impressed! Our meeting this year is full of exciting talks, education, and thrilling cases. We will touch on hot topics from the basics on invasive hemodynamic physiology to the most dreaded pulmonary vein stenosis to the new techniques of utilizing flow restrictors and electrosurgery," said Dr. Howaida El-Said, MD, PhD, FSCAI, Assistant Program Chair.



SCAI President Dr. George D. Dangas, MD, PhD, MSCAI gives remarks at SCAI Scientific Sessions

Additional highlights include:

- The Pediatric and Congenital Interventional Cardiology Early-career Society (PICES) group detailing ventricular assist device (VAD) cannula stenting and how to place adult-size stents in small children.
- The Mullins lecture, which will go back to the origins of congenital interventions and what the field has learned along the way.
- A pulmonary valve session focused on what is new in the field.
- A patent ductus arteriosus session to teach tips and tricks of the craft.
- The "forgotten" tricuspid valve.

"And, of course, our favorite 'I blew it' session to pump up our adrenaline and keep us humble," El-Said said. "We look forward to seeing all of our friends while we learn together and share our knowledge and rekindle our friendship!"

This track will appeal to trainees, early-career physicians, and experienced practitioners of congenital interventional cardiology.

Attendees at Scientific Sessions can include:

- An invasive, interventional, or general cardiologist.
- Pediatrician specializing in congenital heart disease.
- Cardiology or interventional cardiology fellow-in-training.
- Cath lab nurse practitioner, physician assistant, nurse, technologist, radiologic technologist, or technician.

Registration includes on-demand access to meeting content for three months after the meeting ends so you can catch up on anything you missed after the event.

For more information and to register, visit: www.scai.org/SCAI2024.





Children's Hospital Colorado



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Introducing Shelley Miyamoto, MD, Chair of Pediatric Cardiology

Children's Hospital Colorado and the University of Colorado School of Medicine are pleased to announce Shelley Miyamoto, MD as the Co-Director of the Heart Institute and Section Head of Cardiology, Department of Pediatrics, University of Colorado School of Medicine. Dr. Miyamoto holds the inaugural Jack Cooper Millisor Chair in Pediatric Heart Disease at Children's Colorado. Through basic and translational research, she studies dilated cardiomyopathy and congenital heart disease. As a member of multiple industry associations, Dr. Miyamoto has been awarded several patents and has played a critical role in the Heart Institute's recent acceptance into the Pediatric Heart Network.

Career Opportunities

MEDICAL DIRECTOR, CARDIOVASCULAR IMAGING

The Medical Director of Cardiovascular Imaging will provide overarching leadership for all non-invasive cardiovascular imaging activities. The Director will be empowered to promote advancements in cardiac imaging techniques, provide mentorship and career development of faculty, and promote the education and training of fellows.

- Imaging team includes 14 faculty, 28 sonographers and technicians trained in obtaining cardiac MRI and CT images
- Advanced fellowship in cardiac imaging and cardiac echo research core laboratory capability
- High volume multimodality imaging program (25,000+ echos, 1,700+ fetal echos and 600+ cardiac MRIs performed annually)
- Robust telehealth capabilities across 7-state referral region
- Faculty with expertise and research interests in 3D echo, strain imaging, cross-sectional imaging (including fetal cardiac MRI) and intracardiac echo (ICE)
- Active echo QI program

MEDICAL DIRECTOR, SINGLE VENTRICLE PROGRAM

The inaugural Medical Director of the Single Ventricle Program at Children's Colorado will provide leadership of established single ventricle outpatient clinics and will be encouraged to develop a vision for how to optimize and advance the inpatient transition of single ventricle patients across all surgical stages.

- Team includes 6 physicians, an APP and dedicated nurse coordinator
- Performed the 2nd most Norwood procedures in the country in 2022
- Existing Complex Congenital Heart Disease Clinic for interstage patients that includes a home monitoring program and a Single Ventricle Continuity Clinic for patients stage II and beyond
- A Fontan Multidisciplinary Clinic that includes expertise in pediatric and ACHD cardiology, hepatology, pulmonology, neuropsychology and nutrition

MEDICAL DIRECTOR, FETAL CARDIOLOGY

The Medical Director of Fetal Cardiology will have critical leadership responsibilities with respect to strategic planning, and advancements of medical education, research, and QI initiatives in both the Heart Institute and the Colorado Fetal Care Center.

- Fetal cardiology team includes 4 cardiologists, 2 sonographers and a dedicated nurse coordinator
- Over 240 deliveries with 105 attributed to cardiac abnormalities
- High volume fetal echo telehealth program
- Membership in the Fetal Heart Society
- 7-state referral center for fetoscopic laser photocoagulation treatment in twin-twin transfusion syndrome, fetal arrhythmias, heart block, cardiomyopathies, complex congenital heart disease and more

ACUTE CARE HOSPITALIST

Responsibilities will include providing intermediate level cardiac care in the Cardiac Progressive Care Unit (CPCU), a dedicated telemetry unit with a favorable nurse to patient ratio and a supporting cardiology consultative service throughout Children's Colorado.

- Team supported by APPs, cardiology fellows, as well as dedicated nutritionists, pharmacists, social workers and discharge coordinators
- Over 700 cardiac surgeries performed in 2023
- Averaged nearly 1,400 CPCU admissions annually for the past 3 years
- Opportunities to contribute to medical education, QI projects, and clinical protocol development
- Participation in the Pediatric Acute Care Cardiology Collaborative (PAC3)

To apply, please contact:

SHELLEY MIYAMOTO, MD

Chair, Pediatric Cardiology, University of Colorado School of Medicine
Co-Director, Heart Institute, Children's Hospital Colorado



Shelley.Miyamoto@childrenscolorado.org



Calling All Trainees: Join the Trainee Committee of the AAP Section on Cardiology and Cardiac Surgery

Dean Karahalios, DO, FAAP & Andrew Headrick, MD, MPH, FAAP

The American Academy of Pediatrics (AAP) is the home for all pediatric trainees. The Trainee Committee of the AAP Section on Cardiology and Cardiac Surgery (SOCCS) is a dynamic group of medical students, residents, and fellows collaborating to meet the needs of trainees pursuing a career in pediatric cardiology. Drawing on the resources of both SOCCS and the AAP Section on Pediatric Trainees (SOPT), the SOCCS Trainee Committee develops programming and resources for trainees at all levels. This committee aims to expand your knowledge base and enhance your training experience through collaboration at regional and national levels. The group devotes itself to accomplishing this goal through four different workgroups: Career Planning, Medical Education, Advocacy, and Communication.

There is no group that understands the needs of trainees like trainees themselves. As such, previous feedback from trainees regarding their training experience has been crucial in driving several different initiatives under the career planning workgroup. In one such example, the Committee is working to enhance mentoring opportunities and connections in a streamlined fashion utilizing the AAP Mentorship Program. In addition, this year the Committee will host the third annual webinar titled, "What Comes After Fellowship: Preparing for Fourth Year Fellowship or Your First Attending Job." This webinar focuses on educating trainees about pediatric cardiology job market characteristics and preparing for a job or senior fellowship search. It features breakout rooms dedicated to each subspecialty of pediatric cardiology, where faculty and current fourth year fellow panelists will offer specialty-specific insights on the fellowship and job application processes. Breakout rooms feature faculty and current fourth year fellows in trainees' respective fields of interest, and help fellows gain specialty-specific insights on the fellowship and job application processes. The SOCCS Trainee Committee has also organized a financial wellness webinar for pediatric cardiology trainees and has been involved in SOPT webinars devoted to preparing residents for the pediatric cardiology fellowship application process.

Another chief concern of trainees across the country is developing the knowledge needed to become a competent pediatric cardiologist. Responding to feedback about the paucity of board review materials in pediatric cardiology, the SOCCS Trainee Committee has partnered with Heart University (www.heartuniversity.org) to start an exciting new monthly board review initiative as well as multidisciplinary educational modules related to neonatology and cardiology. Additionally, the Committee will host its inaugural webinar titled, "Difficult Cases in Pediatric Cardiology: Navigating Management Without a Consensus." This webinar will feature a complex clinical case with dynamic attendee involvement, will be moderated by attendings with varying practice patterns, and conclude with a didactic and debate segment reviewing the merits of each practice approach.



Join our WhatsApp group!

Network and get involved in career planning, education, advocacy, and communication projects to launch your career.

Virtual Meetings on the 4th Wednesday of every month. Trainees at all levels welcome!

From an advocacy and communications standpoint, the SOCCS Trainee Committee is collaborating with the SOCCS Advocacy Committee to develop a webinar titled, "Perinatal Mental Health and Congenital Heart Disease." Moreover, the Committee constantly works to enhance membership and bring relevant AAP resources locally, appropriate to the training program level of each trainee. This past year has included in-person social gatherings at each pediatric cardiology conference, allowing for sharing of resources, and helping trainees expand their network outside their respective institutions.

All trainees at every level of training—medical students, residents, and fellows—are welcome to join the SOCCS Trainee Committee to contribute to all of the above initiatives and more. AAP membership is a requirement and can be accessed at www.aap.org/join. In most scenarios, national AAP membership is either paid for by training programs or eligible for reimbursement. After obtaining national AAP membership, training fellows can join SOCCS at no cost. Residents are currently charged a \$10 fee to join SOCCS, though the section is working to remove that soon. Ultimately, the SOCCS Trainee Committee is a rewarding group that enriches the early careers of so many trainees. It provides countless opportunities to network and pursue extra-clinical initiatives specific to each individual's interest. If you have any questions about joining this vibrant, active group, do not hesitate to reach out to the SOCCS



Trainee Committee Chairs, Dean Karahalios and Andrew Headrick, at aapcardstrainee@gmail.com.



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PennState Health
Children's Hospital

Outpatient Pediatric Cardiologist

Penn State Health Children's Heart Group is seeking a dedicated outpatient pediatric cardiologist who has the desire to develop a community-based practice that will align itself with local hospitals and neonatology practices, provide personalized services to pediatricians and family practice providers in these communities, and grow the practice in these cities. The intention is for the successful applicant to reside in one of the following cities, or a nearby community: Lancaster, York, or Reading.

Join our Division of Pediatric Cardiology now! We are committed to excellent clinical care, teaching, and research. **Interested applicants, [please apply here](#) and send CV and Cover Letter to John P. Breinholt, MD Professor and Chief, Pediatric Cardiology jbreholt@pennstatehealth.psu.edu**

Our team of providers consists of 12 board-certified pediatric cardiologists, 6 adult congenital cardiologists, 5 advanced practice providers and support staff. Our cardiologists have expertise in pediatric cardiology, adult congenital heart disease (ACHD), interventional cardiology, cardiac imaging and MRI, fetal cardiology, electrophysiology, preventive cardiology, and telemedicine.

We have state of the art facilities in these communities, supported by APPs, echo sonographers, and close alignment to the specialized services provided at the medical center, including: exercise physiology, electrophysiology, interventional cardiology, and cardiac surgery. We are closely aligned with the ACHA accredited Adult Congenital Heart Disease program who provide outreach services to these areas. There is an ACGME accredited fellowship program that accepts one fellow per year.

- The ideal candidate has at least one to three years of clinical experience and demonstrated excellence in outpatient pediatric cardiology care
- Supported by on-site clinical support staff and sonography services
- Academic position as an assistant or associate professor of pediatrics at Penn State College of Medicine
- The Echocardiography laboratory at Penn State Children's Hospital is accredited in pediatric transthoracic, TEE and fetal echocardiography
- Fetal cardiology abilities are desirable, but not required. Fetal cardiologists provide services to these areas at present, however a cardiologist with this skill set would be able to utilize it in this practice location.
- Opportunity to participate in the inpatient service is optional, based on applicant preference.

What we're seeking:

- We are seeking someone BC/BE trained in Pediatric Cardiology.
- M.D., D.O., or foreign equivalent
- Candidates must be board certified or board eligible in pediatric cardiology and able to obtain an unrestricted PA license.
- BLS and PALS certification is required.

Opportunity highlights:

- Competitive salary and benefits
- Sign on bonus and Relocation assistance,
- CME time and funds,
- LTD and Life insurance, and so much more!
- Penn State University tuition discount for employees and dependents

Area highlights:

Penn State Health has opened new pediatric outpatient centers in Lancaster and York in 2022. We are looking to open a new clinic in Reading. The Lancaster Pediatric Center (47,000 sq feet) houses more than 40 exam and consultation rooms. It includes 20 medical and surgical pediatric specialty and sub-specialty services. It also offers consultations with psychiatrists and behavioral health specialists. The York Leader Heights Center (5600 sq feet) houses pediatric sub-specialties, reproductive endocrinology and fertility. It provides a wide spectrum of care for children including 5 medical and surgical pediatric sub-specialty services.

Forbes magazine describes Lancaster as a "newly hip Victorian city—just three hours from New York City—is still one of the U.S.'s best kept secrets. The center of Amish country is bucolic but boasts a bustling food scene and is quickly becoming a cultural hotbed. The architecture is the real star, so explore the alleys and cobblestone streets by foot, checking out the many repurposed old warehouses that house thriving businesses... The arts are central to Lancaster's growth, notably the stunning Fulton Theatre and neighboring Prince Street, Lancaster's gallery row, which pulses with art on summer first Fridays."

Founded in 1741, the city of York is considered by many as the first capital of the United States. The Articles of Confederation were signed by the Second Continental Congress here in 1777. Its beautifully restored historic district is an architectural treasure. While York retains its farming and manufacturing heritage, at its heart York is a thriving cultural community that has attracted creative talent and innovative entrepreneurial investors from across the nation. Life in York County offers affordable housing, options for higher education, a thriving arts and cultural community, historical attractions, parks and recreational resources, a semiprofessional baseball team, fine dining and more — within an easy drive of major East Coast cities, including Baltimore, Washington D.C., and Philadelphia. It is also near the scenic Pocono Mountains to the north.

This is an opportunity to direct program growth in one of our population centers, and tailor a practice to your expertise and interests. Neighboring cities are also potential areas of growth.

About Penn State Health: Penn State Health is a multi-hospital health system serving patients and communities across 29 counties in central Pennsylvania. It employs more than 18,000 people systemwide.

The system includes Penn State Health (PSH) Milton S. Hershey Medical Center, Penn State Health Children's Hospital and Penn State Cancer Institute based in Hershey, Pa.; PSH Hampden Medical Center in Enola, Pa.; PSH Holy Spirit Medical Center in Camp Hill, Pa.; PSH Lancaster Medical Center in Lancaster, Pa.; PSH St. Joseph Medical Center in Reading, Pa.; Pennsylvania Psychiatric Institute in Harrisburg, Pa., and 2,450+ physicians and direct care providers at 225 outpatient practices. Additionally, the system jointly operates various healthcare providers, including PSH Rehabilitation Hospital, Hershey Outpatient Surgery Center and Hershey Endoscopy Center.

In 2017, Penn State Health partnered with Highmark Health to facilitate creation of a value-based, community care network in the region.

Penn State Health shares an integrated strategic plan and operations with Penn State College of Medicine, the University's medical school. With campuses in State College and Hershey, Pa., the College of Medicine boasts a portfolio of more than \$150 million in funded research and more than 1,700 students and trainees in medicine, nursing, other health professions and biomedical research.



Camp is Good Medicine

Sara Meslow, Executive Director, Camp Odayin

At Camp Odayin, we provide fun, medically safe and emotionally supportive camp experiences and community building opportunities for young people with heart disease and their families. Our goal is to improve the quality of life, mental health, and overall well-being of our campers. Young people with heart disease often experience high levels of anxiety, depression, and trauma and Odayin provides a safe and supportive environment to lessen these mental health challenges. We provide a sense of belonging, community bonding, connection to nature, and a ton of campy fun! Fifty-four percent of our campers said that attending Odayin has improved their mental health. Camp is good medicine!



Our former camper, now volunteer camp counselor, Elena, shares her Odayin story:

I am a former camper and current heart patient. I genuinely cannot count how many cardiac procedures I've had, and I have no memory of a life without heart disease since my condition was discovered when I was 2 months old. What I do remember, what it all felt like before I went to camp.

While I was growing up with serious cardiac illness, well-meaning adults tended to treat me like I was made of glass. I grew accustomed to being sequestered, separated, having to constantly explain to both peers and adults why I couldn't fully participate in certain everyday activities because of the fatigue those activities would induce, eat certain foods because of their conflicts with my medications, or even walk through a metal detector because I had a pacemaker.

It was kind of a stressful lifestyle for a 12-year-old. I glowered enviously at those big-name with diseases with well-publicized 5Ks and people wearing pink for a whole month, and trendy rubber bracelets. On the occasions people did mention 'heart disease', it was all old people and something about cholesterol, which meant they obviously weren't talking about me. Nobody knew anything about kids like me. My diagnosis was cardiomyopathy. My disease was loneliness.

Then, in 2005 during one of my many cardiology appointments, I picked up a brochure sitting on one of the side tables in the waiting room. It described a summer camp, a real sleepaway summer camp, for kids with heart disease. But I was overjoyed, because prior to that moment, camp had just been another thing on the long list of stuff I could never do. After much pleading and very diligent research, my parents agreed, piled the family into our SUV, drove six and a half hours, and nervously hand-delivered me to Camp Odayin.

The rest, as they say, is history. At camp, for the first time in my life, I met a lot of other kids who were just like me. I met other kids who had also had countless surgeries and proudly sported the telltale "zipper" scar on their torso. I met older teens, and counselors who served as role models who truly "got me" in a way few others did. I tried new things that my thoroughly urban environment simply couldn't have introduced me to – horseback riding, tubing, kayaking, and roasting marshmallows over a bonfire (we usually just used the microwave at home).

For five glorious days, I was introduced to myself, and to who I might be outside of hospital rooms and surgeries and anxiety. For five days the most salient detail about me to most adults, that is to say my heart problem, just didn't matter. I also gained really important perspective on my life and the severity of my condition, as I met many other kids multiple diagnoses of equal severity to my own.

When I returned, my parents were floored. I overheard my mom telling her sisters how much more confident I seemed, no small feat for a middle school girl. They happily sent me again and again and again, and soon my friends became theirs too. When I "graduated" from camp, the support didn't stop there, as the young adult retreat reconnected many old camp friends and provided valuable information about how we might best manage our transitions into the world of adult cardiac care.

I went for fun and I gained a family, a community, and the sense of identity that so many chronically ill people are robbed due to circumstance. My parents could connect with others who could truly understand their worries and hopes for their child. I met one of my lifelong best friends at camp that very first year.

I simply do not know who I would be if I hadn't had that chance at 12-years-old. Each year at camp I could see bright, technicolor flashes of the adult I might become. Historic civil rights activist Marian Wright Edelman said, "You cannot be what you cannot see," and through camp I could finally see so much. Camp Odayin allows heart warriors, families, and friends to see and be seen.





Pediatric Cardiologist

Opportunity in the South Bay Area - Capitola, California

Packard Children's Health Alliance / Stanford Children's Health is actively recruiting a Cardiologist to join our group in [Capitola](#).

Position details/qualifications:

- MD or DO
- BC/BE in Pediatric Cardiology
- Current license to practice medicine in the state of California

Our location:

- Close proximity to Santa Cruz, known for its beaches, redwood forests, and unique surf and arts culture
- Breathtaking views of Monterey Bay
- Enjoy our mild weather where the sun shines 300 days/year

We offer:

- \$325,000-\$375,000 plus annual productivity incentives
- Full benefits package, including relocation bonus for qualified moves

At Stanford Children's Health, we are focused on bringing world-class, family-centered care to communities throughout the San Francisco Bay Area. A rapidly growing medical foundation, developed in partnership with Lucile Packard Children's Hospital Stanford and the Stanford School of Medicine, we are bringing together some of medicine's premier talent to meet the health challenges faced by today's children and expectant mothers. If you'd like to be part of an organization that's establishing new standards of care—and helping children and their families grow stronger every step of the way—consider joining us today.

To find out more about how you can make an impact on our growing organization, please send your resume with **"Pediatric Cardiologist"** in the subject line of your email to: mlipman@stanfordchildrens.org.



66 Hospitals Unite Under ACTION to Bridge Gaps in Pediatric Cardiac Care

Sixty-six hospitals across the country have joined forces to enhance outcomes for pediatric heart patients. While specialized devices for heart disease significantly benefit adults, the pediatric realm faces a challenging reality: the lack of dedicated medical devices tailored for children. Consequently, physicians are often compelled to adapt adult-sized FDA-approved devices for pediatric use, leading to prolonged hospital stays and, in some cases, children being tethered to monitors for years.

Heartbreaking Statistics and Unprecedented Collaboration

In the United States, pediatric heart failure, with over 14,000 hospitalizations annually, surpasses those due to pediatric cancer. Despite these staggering numbers, research and innovation in this critical area are grossly underappreciated and underfunded. Presently, therapies for managing pediatric heart failure largely derive from adaptations of adult treatments, forcing healthcare providers into a challenging situation where medications and devices not originally intended for children are employed without adequate evaluation.

Enter ACTION, www.actionlearningnetwork.org/, the Advanced Cardiac Therapies Improving Outcomes Network, a pioneering collaboration among pediatric heart failure hospitals nationwide. Consisting of physicians, nurses, patients, families, and researchers, ACTION is a united force dedicated to improving outcomes and enhancing the quality of life for young heart failure patients. This collaborative effort signifies an unprecedented milestone, replacing traditional approaches.

"As we reflect on the journey, February's Heart Health Month spotlights persistent challenges," says Angela Lorts, MD, MBA, and Co-Executive Director of ACTION. "Beyond celebrating achievements, we recognize a critical imperative – the desperate need for tailored medical devices for children."

ACTION Achievements in 2023 and Future Innovations in 2024

In 2023, ACTION launched the first FDA-regulated trial for a pediatric ventricular assist device registry with Berlin Heart, Inc. This expanded health literacy, published impactful research, established

new guidelines for patients, and launched a Heart Healthy Video Series featuring celebrity ambassador Julian Lerner.

"I had been wanting to contribute in a meaningful way to an organization that focuses on helping children. Once I learned about ACTION's mission to keep kids' hearts healthy, I knew that I had found just the right place – a place where I could make a tangible, positive difference for kids and their families," says ACTION's celebrity ambassador Julian Lerner.

For 2024, ACTION anticipates FDA approval of the Berlin Heart Active Driver, which is expected to revolutionize pediatric heart care. Collaborating globally, ACTION aims to enhance patient quality of life and advocate for pediatric-specific devices, transcending national boundaries.

About ACTION

To explore ACTION's initiatives, achievements in 2023, and plans for 2024, kindly visit www.actionlearningnetwork.org.

ACTION (Advanced Cardiac Therapies Improving Outcomes Network) is a global organization dedicated to enhancing outcomes for heart failure patients, with a particular focus on children. Since 2017, ACTION has fostered international collaboration among patients, families, clinicians, researchers, payors, and industry stakeholders. Based in Cincinnati, OH, ACTION deploys a quality improvement and research-based approach, uniting 66 network sites and 1,185 members to share data, develop solutions, and drive innovations.

Discover more at www.actionlearningnetwork.org.



NEONATOLOGY TODAY
Peer Reviewed Research, News and Information in Neonatal and Perinatal
Medicine



Pediatric Cardiologist

Southern California Permanente Medical Group

Los Angeles, California

I am a PERMANENTE PHYSICIAN.

A skilled practitioner who seeks to create high-quality outcomes through integrated care.

Every physician who is part of the **Southern California Permanente Medical Group** shares a passion for advancing the practice of medicine. We fuel that passion by creating a culture of innovation and collaboration—one where the quality of care we deliver is elevated by the accelerated resources we provide.

PEDIATRIC CARDIOLOGIST

Opening in Los Angeles, California

Opportunity to join an established Pediatric Cardiology clinical practice comprised of ambulatory clinic, inpatient consultation/rounding, fetal/transthoracic echo performance/interpretation, and limited cardiac catheterization responsibilities. The Pediatric Cardiology staff at the Southern California Permanente Medical Group currently consists of 12 full-time and 1 part-time per diem Pediatric Cardiologist across the Southern California region.

We are recruiting a full-time Pediatric Cardiologist to join our group in Los Angeles. The Kaiser Permanente Los Angeles Medical Center (LAMC) is a member of the Children's Hospital Association and is one of three tertiary medical centers in the Kaiser Permanente Pediatric Care (KPPC) network. LAMC is the flagship tertiary/quaternary care center for Kaiser Permanente in Southern California and is the site of the regional cardiac catheterization laboratories as well as all other highly complex subspecialty services in Southern California. As the referral center for all of Southern California, LAMC houses a 16-bed PICU, a 32-bed NICU, and a 32-bed inpatient Pediatric floor staffed 24/7 with hospitalists/intensivists.

Clinical responsibilities include call one day/week and one weekend every 6 weeks. We place great emphasis on fostering a strong culture of collaboration and support among pediatric medical and surgical specialties across the KP Southern California region. In addition, we play a very active role in training the next generation of physicians, both by teaching resident physicians/fellows and as a designated clerkship site for the Kaiser Permanente Bernard J. Tyson School of Medicine.

Potential clinical roles include:

- Outpatient consultation and follow-up care
- Inpatient consultation and rounding
- Performing/interpreting transthoracic echo – limited fetal echo duties
- Cardiac Catheterization Lab – function as an assistant (never solo) 6 days/month
- Providing virtual medical care
- Physician-physician advice via telephone and electronic advice communication tools
- Shared call schedule with other KP pediatric Cardiology physicians
- Opportunity for mentorship and clinical teaching of KP School of Medicine students.
- Bimonthly Regional Cardiac conference and discussion

SCPMG is proud to offer its physicians:

- An organization that has served the 4.9 million Kaiser Permanente members throughout Southern California for more than 70 years
- A physician-led, physician-owned, and physician-operated practice that equally emphasizes professional autonomy and cross-specialty collaboration
- Comprehensive administrative support
- An environment that promotes excellent service to patients
- A fully implemented electronic medical record system
- An excellent salary, comprehensive benefits, and partnership eligibility after 3 years

Pay range for full-time openings is \$273,111.00 - \$372,375.00. Minimum salaries are inclusive of premium pay and incentives depending on skills and competencies and geographic location. Annual Salary will be based on longevity with the Group and FTE work schedule/effort.

For consideration or to apply, please visit our website at: <https://southerncalifornia.permanente.org/jobs/type/pediatrics>.

For questions or additional information, please contact **Glenn Gallo** at: 877-608-0044 or Glenn.Gallo@kp.org. We are an AAP/ EEO employer.

The **Answer** to Health Care in America.



FDA Grants Breakthrough Device Status to Toku's Patented Cardiovascular Risk AI (CLAiR) Platform

Toku's AI (CLAiR) technology platform has received FDA Breakthrough Device status, and if cleared by the FDA will deliver real-time cardiovascular disease (CVD) risk assessments through routine eye exams. FDA's Breakthrough Device designation expedites the development and review process, shortening the time until Toku's AI technology is able to reach the market. Consequently, patients, especially those in lower socioeconomic groups who may lack access to robust healthcare, will benefit from earlier access to non-invasive and point-of-care CVD risk assessments, which in turn can lead to early prevention and improved outcomes. The patented CLAiR AI technology platform, if cleared for marketing, will integrate seamlessly into existing retinal cameras to allow widespread access to CVD assessments through eye care clinics, primary care, and pharmacies. Toku recently joined the Innovator's Network of the American Heart Association's Center for Health Technology & Innovation, a group dedicated to fostering development of innovative and scalable healthcare solutions. Toku plans to reach the US market by mid-2025.

(BUSINESS WIRE)--Toku, Inc., a commercial medical device company specializing in imaging technology and AI, announced that the U.S. Food and Drug Administration (FDA) has granted Breakthrough Device designation to its patented CLAiR technology. The CLAiR platform, if cleared by the FDA, will be the first medical device in the US market that can provide affordable, point-of-care and non-invasive evaluation for risk of cardiovascular disease (CVD) using fundus retinal images through a routine eye exam. Working with its partners, Toku is aiming to establish the largest network for CVD risk assessment across the US and then globally. Toku recently joined the Innovator's Network, part of the American Heart Association's Center for Health and Technology & Innovation. Inclusion in this group will enable Toku to collaborate easily with other cutting-edge companies creating the next generation of high-tech healthcare solutions as the Company works to bring the CLAiR platform to scale commercially, pending clearance from the FDA.

The retina, located in the back of the eye, is the only transparent part of the vascular system and can be photographed easily and non-invasively. The CLAiR technology is designed to integrate readily with existing retinal imaging cameras, to provide real-time CVD risk assessments with accuracy comparable to traditional cardiovascular risk assessment tools (which typically include multiple measurements and blood tests and can take weeks). The AI-powered CLAiR technology can interpret the many tiny signals conveyed through retinal images of blood vessels to identify elevated cardiovascular risk that may be caused by genetics or risk factors such as hypertension or high cholesterol. These results can then be shared with the patient's primary care physician, who can initiate a comprehensive cardiovascular evaluation. Retinal imaging is routinely performed in a variety of eyecare settings

and is increasingly being implemented in primary care clinics and pharmacies across the US. Once cleared by the FDA, the CLAiR technology will provide healthcare professionals across multiple settings with the ability to check for elevated cardiovascular risk before the onset of clinical disease.

"Toku's mission is to make identifying disease accessible for everyone, everywhere, all the time. The Breakthrough Device designation that the FDA has granted to our CLAiR technology platform is a validation of the tremendous potential our CLAiR AI technology can provide to the tens of millions of patients who may unknowingly be at risk of a devastating cardiovascular condition," said Associate Professor Ehsan Vaghefi, CEO and Co-Founder of Toku. "This designation greatly de-risks our clinical development and regulatory pathway for the technology, as the FDA's Breakthrough Devices program offers medical device companies accelerated review processes, enhanced guidance, and prioritized evaluation, facilitating quicker market access for innovative technologies and encouraging the development of devices that significantly improve patient care."

"I am excited by the potential of Toku's CLAiR technology as it can help improve health equity both in the United States and elsewhere in the world," said Michael V. McConnell, MD, MSEE, Clinical Professor of Preventive Cardiology, Stanford University and author of Fight Heart Disease Like Cancer. "As a clinician, I see broadening access to quality care and prevention as a critical issue, and the CLAiR retina scan technology may help improve the cardiovascular health of more people worldwide."

"Predictive analytics technology, provided it has been proven to be accurate and applicable to the population using it, has tremendous potential to benefit patients by identifying those at highest risk so treatments and preventive measures can be initiated quickly. The medical literature has published many examples using different types of eye imaging to predict risk of other systemic conditions beyond cardiovascular disease, such as neurologic or kidney disease. Therefore, further developing this type of technology is very exciting as cardiovascular disease remains a significant cause of morbidity and mortality in the whole country," said April Maa, MD, Professor of Ophthalmology, Emory University School of Medicine.





Director of Pediatric Interventional Cardiology

At Presbyterian, it's not just what we do that matters. It's how we do it. *How we do things here makes all the difference.*

Presbyterian is a great place to practice medicine and provide safe, high-quality care. Here, you'll find a different way to make a difference.

Presbyterian Medical Group seeks an exceptional leader to become the **Director of our Congenital Cardiac Catheterization program**. We are the only CHD surgical center in the state and perform 200 congenital cardiac interventions per year.

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Practice Highlights

- This is a unique opportunity to build and grow a high-quality interventional cardiology program in an underserved area.
- The position will require strong teamwork skills as the successful applicant will work closely not only with their cardiology, surgical, and ICU colleagues but also communities throughout the state to ensure timely access to interventional congenital cardiac care.

What We're Seeking

- Must Be BE/BC in Pediatric Cardiology
- Complete an interventional pediatric cardiology fellowship
- At least two years of post-fellowship experience
- Patient-focused and willing to collaborate and work in a team environment
- Ability to obtain a medical license to practice in the state of New Mexico

We offer all employees a robust, day one effective benefits plan consisting of medical, dental, and vision and more. Exceptional retirement plans – 403b retirement savings program with both matching programs and employer contributions.

About Presbyterian Healthcare Services:

Presbyterian Healthcare Services exists to improve the health of patients, members and the communities we serve. We are a locally owned, not-for-profit healthcare system of nine hospitals, a statewide health plan and a growing multi-specialty medical group. Founded in New Mexico in 1908, we are the state's largest private employer with nearly 13,000 employees – including 1,200 providers and 3,500 nurses.

Our health plan serves more than 640,000 members statewide and offers Medicare Advantage, Medicaid (Centennial Care) and Commercial health plans.

What the Area Offers:

New Mexico continues to grow steadily in population and features a low cost-of-living.

Varied landscapes bring filmmakers here from around the world to capture a slice of the natural beauty New Mexicans enjoy every day. Our landscapes are as diverse as our culture – from mountains, forests, canyons, and lakes, to caverns, hot springs and sand dunes.

New Mexico offers endless recreational opportunities to explore and enjoy an active lifestyle. Venture off the beaten path, challenge your body in the elements, or open yourself up to the expansive sky. From hiking, golfing and biking to skiing, snowboarding and boating, it's all available among our beautiful wonders of the west.

To learn more about Presbyterian or to apply, contact Tammy Duran at tduran2@phs.org or (505) 923-5567.

AA/EOE/VET/DISABLED/NMHRA. PHS is committed to ensuring a drug-free workplace.



New Combination of Techniques May Improve Stent Expansion for Patients Undergoing Percutaneous Coronary Intervention

Principal Investigator: Samin Sharma, MD, Director of Interventional Cardiology for the Mount Sinai Health System

Conference: Transcatheter Cardiovascular Therapeutics (TCT 2023) – Featured Science Presentation

Title: Rotational atherectomy combined with cutting balloon to optimize stent expansion in calcified lesions – Primary Results of the ROTACUT Trial

Bottom Line of the Study: Rotational atherectomy (RA) is an established technique for PCI of moderately or severely calcified coronary lesions. Currently, as the standard treatment, interventional cardiologists perform a rotational atherectomy on these patients followed by high pressure balloon dilation and then drug-eluting stents.

The hypothesis of the study was that using a cutting balloon in addition to rotational atherectomy (RA) would improve coronary stent expansion. While the minimum stent area did not significantly differ between the groups treated with RA plus cutting balloon angioplasty versus the group treated with RA plus non-compliant balloon angioplasty, there was a trend toward improving stent expansion. The important takeaway is that RA plus cutting balloon angioplasty was safe with rare procedural complications and few clinical adverse events at 30 days.

Why this Study is Important: Calcified coronary lesions remain a challenge for interventional cardiologists and are associated with procedural complications.

Why this Study is Unique: This is the first randomized control trial investigating combination of two ablative techniques with serial intravascular imaging assessments.

Study Findings: There was no significant difference in stent expansion between the group treated with RA plus cutting balloon angioplasty versus the group treated with RA plus non-compliant balloon angioplasty, but there was a trend toward improving stent expansion. The important takeaway is that RA plus cutting balloon angioplasty was safe with rare procedural complications and few clinical adverse events at 30 days.

How the Research was Conducted: Twenty-nine patients from two sites, including The Mount Sinai Hospital in New York City were randomized to RA plus cutting balloon angioplasty group and 31 patients to RA plus non-compliant balloon angioplasty. Procedural outcomes were assessed by an imaging core lab. Clinical follow up was obtained by phone calls.

The Results: No differences in minimum stent area or other measures of stent expansion were found on angiography or intravascular ultrasound between the groups. There were rare procedural complications and few clinical adverse events.

What the Results Mean for Physicians: The study findings have important implications. The use of a combination of RA and CBA appears safe in clinical practice and is associated with high procedural success. This study can be the foundation of larger trials to see if outcomes can be improved for patients with calcific lesions using this strategy.

What the Results Mean for Patients: If patients need to undergo PCI for calcified coronary lesions, they there is now an additional strategy that has been proven to be safe to treat these complex abnormalities.

Quote: “Calcific lesions are amongst the most complex lesions for patients undergoing PCI. The ROTACUT study sought to investigate the safety and efficacy of two approved ablative technologies in combination compared with Rotational atherectomy alone. While we did not show improvement of the Stent area by imaging, we did observe trend toward improving stent expansion, and observed no safety issues at all. This will set the stage for a larger randomized trial to evaluate how best to treat calcific lesion,” says Samin Sharma, MD, Director of Interventional Cardiology for the Mount Sinai Health System.

For more information, visit www.mountsinai.org or find Mount Sinai on Facebook, Twitter and YouTube.



CHIP NETWORK

CONGENITAL HEART INTERNATIONAL PROFESSIONALS





Join Our Growing Team

at the Heart Institute at UPMC Children's Hospital of Pittsburgh

UPMC CHILDREN'S HOSPITAL OF PITTSBURGH

The Division of Cardiology at UPMC Children's Hospital of Pittsburgh / University of Pittsburgh School of Medicine, one of the premier pediatric cardiology programs in the country, is currently recruiting two excellent candidates for the faculty positions of Adult Congenital Heart Disease and Electrophysiology.

The Heart Institute provides comprehensive pediatric and adult congenital cardiovascular services including CT surgery, interventional cardiology, cardiac intensive care, electrophysiology, advanced imaging (MRI/CT), heart failure, transplant, pulmonary hypertension, adult congenital, fetal, and preventative cardiology programs, among others. Our program serves pediatric and adult congenital heart patients within central and western Pennsylvania, and surrounding states, as well as national and international locations. Our group consists of 35 pediatric cardiologists, 5 pediatric cardiothoracic surgeons, 8 pediatric cardiac intensivists, and 11 cardiology fellows along with 24 advanced practice providers and a staff of more than 300. We are honored to be ranked **#8 nationally** and **#1 in Pennsylvania** for pediatric cardiology and heart surgery by U.S. News and World Report. The Heart Institute at UPMC Children's is continually recognized by the Society of Thoracic Surgeons (STS) for excellence in congenital heart surgery. Our surgical program, led by Dr. Victor Morell, achieves the highest possible rating by the STS, which places UPMC Children's among the top institutions in the U.S. and Canada for patient care, CT surgery outcomes, and congenital heart surgery. UPMC is a nationally ranked medical center that serves as the regional referral center for multiple specialties providing a growing collaborative environment for quality care.

ADULT CONGENITAL HEART DISEASE FACULTY

- The well-established ACHD program is currently supported by 3 ACHD physicians (including one ACHD Director), 2 advanced practice providers, 2 dedicated RNs, a research coordinator, and a social worker. We are currently seeking an applicant who has expertise in the management of adult congenital heart disease with prominent clinical, teaching, and research skills. He or she will be working closely with the division chief, the ACHD director, and hospital leadership to support program expansion. Candidates must be board-eligible/certified in pediatric cardiology or adult cardiovascular diseases and in adult congenital heart disease.

ELECTROPHYSIOLOGY FACULTY

- We are seeking a full-time pediatric electrophysiologist at the Assistant or Associate Professor level. Candidates should be board-eligible/certified in pediatric cardiology, and subspecialty trained in pediatric electrophysiology (EP). Certification from IBHRE for electrophysiology or cardiac devices is recommended though not mandatory.
- Candidates should be clinically excellent and have demonstrated academic productivity. The role would include responsibilities for inpatient and outpatient EP care, including cardiac device management. Experience in invasive EP (ablations and device implantation) is preferred though candidates with an interest in non-invasive EP would be considered. Experience in adult congenital heart disease electrophysiology is desirable. Teaching of multi-disciplinary learners (medical students, residents, fellows, advanced practice providers and nurses) would be expected. The candidate would be joining an EP team consisting of 2 full time invasive electrophysiologists, an EP PA and 2 EP nurses.

UPMC Children's Hospital of Pittsburgh has been named one of the top U.S. News & World Report's Best Children's Hospitals. Consistently voted one of America's most livable cities, Pittsburgh is a great place for young adults and families alike.

This position comes with a competitive salary and faculty appointment commensurate with experience and qualifications at the University of Pittsburgh School of Medicine. The University of Pittsburgh is an Equal Opportunity/Affirmative Action Employer. Interested individuals should forward a letter of intent curriculum vitae, and three letters of reference. Informal inquiries are also encouraged.

Contact information:

Jacqueline Kreutzer, MD, FSCAI, FACC; Chief, Division of Cardiology UPMC Children's Hospital of Pittsburgh
412-692-6903, Jacqueline.kreutzer@chp.edu



Pediatric Cardiologist Heart Transplant and Advanced Heart Failure

Phoenix Children's - Division of Cardiology, is actively seeking up to 3 full-time faculty to join the Advanced Heart Failure – Cardiac Transplant Team at the level of Instructor, Assistant, or Associate Professor of Clinical Pediatrics and Child Health. There is an opportunity for the right candidate to join as or develop into the role of Director of Mechanical Circulatory Support depending on experience. The program performs an average of 12-15 heart transplants annually, follows heart failure patients in both the inpatient and outpatient setting and supports a mechanical circulatory support program offering the full range of pediatric and adult devices. Applicants must have an M.D. or equivalent degree, be board certified or board eligible in Pediatric Cardiology by the American Board of Pediatrics and eligible for medical licensure in the State of Arizona. Candidates will have already completed an ACGME accredited 3-year fellowship in Pediatric Cardiology, with additional 1-2 years of advanced subspecialty training in pediatric advanced heart failure including management of cardiac transplant patients and mechanical circulatory support. This position is not currently accepting J1 visa candidates.

Candidates should demonstrate a rigorous academic focus preferably in clinical and/or translational research, however, basic science opportunities are also available. Academic clinical faculty appointments will be facilitated at the University of Arizona College of Medicine – Phoenix and Tucson, Creighton University School of Medicine, and Mayo Clinic School of Medicine – Scottsdale. Additional research collaborations exist with the Translational Genomics Research Institute (tGen) and the Arizona State University, Department of Bioengineering.

The Division of Cardiology currently hosts a fellowship training program in general pediatric cardiology with 9 fellows distributed over 3 years. The Phoenix Children's Center for Heart Care also hosts subspecialty fellowships in pediatric cardiac critical care, advanced cardiac imaging, and interventional cardiac catheterization. The inpatient service includes a 48-bed CV intensive care unit and transition care unit. Patient care is interdisciplinary involving transplant cardiology, cardiovascular surgery, and dedicated cardiac NP and PA providers. The provision of both workplace based and didactic teaching to fellows, residents, medical students, and nurses is an expectation in this role. The successful candidate(s) will join our program with 24 cardiologists, 13 cardiac intensivists, 3 cardiovascular surgeons, and 25 advanced practice providers. Inpatient pediatric cardiac care is centered at the Phoenix Children's Hospital while adult congenital inpatient care and procedures are also provided at St. Joseph's Hospital and Medical Center. Ambulatory cardiac services are centered at the Center for Heart Care – Thomas Campus and satellite offices are located throughout the Phoenix metropolitan area. Additional general cardiology outreach offices are in Tucson, Prescott, and Yuma AZ.

The Phoenix metropolitan area is the 5th largest metropolitan area in the United States with a population of ~1.6M and an estimated pediatric population of 1M in Maricopa county alone. Phoenix Children's is one of the largest freestanding children's hospitals in the nation with 433 licensed beds and a faculty of over 1200 employed / affiliated physicians. Phoenix is consistently ranked among the Best Places to live in the United States and boasts over 300 sunny days per year and convenient access to ocean and mountain attractions.

Interested candidates should send a curriculum vitae with a cover letter of introduction to:

David Blaha
Physician Talent Acquisition Partner
dblaha@phoenixchildrens.com

Interested candidates can also contact the program director directly:
Steve Zangwill, MD
szangwill@phoenixchildrens.com



Director of Research

The Ward Family Heart Center at Children's Mercy

About the Program and Organization

Our Heart Center is one of the 15 largest clinical pediatric cardiac programs in the USA. We serve a population of over 5 million, consisting of diverse urban, suburban and rural communities with a multi-state geographic catchment that includes Missouri, Kansas and adjacent portions of Nebraska, Iowa, Oklahoma and Arkansas. Annually, we perform over 500 cardiac operations, 600 cardiac catheterizations including over 200 invasive EP procedures, 18,000 outpatient visits, and 20,000 echocardiograms.

Children's Mercy Kansas City is an independent, non-profit, 390-bed pediatric health system, providing over half a million patient encounters each year for children from across the country. Children's Mercy is ranked by USNWR in 9 specialties. Our faculty of nearly 800 pediatric specialists and researchers are actively involved in clinical care, pediatric research and educating the next generation of pediatricians and pediatric subspecialists.

Position Summary

The Ward Family Heart Center (TWFHC) is a service line led by co-directors (Aliessa Barnes, MD and James O'Brien, MD) who report to the Chief Medical Officer (Robert Lane, MD). The Director of Research would report to the Co-Directors of the Heart Center. This is a new leadership position with significant administrative responsibilities; candidates must have significant prior leadership experience. Direct reports to the Director of Research currently include the Administrative Director for Research and Quality (David Cloutier, MS, MBA); as the research enterprise grows, direct reports are expected to increase in number and scope.

In addition to leading their own research program and seeking extramural funding to support that effort, duties will include, but are not limited to:

- Establish the vision and strategic direction of TWFHC Research Program.
- Develop short and long-term plans for Heart Center Research strategy and staffing that are aligned with organizational plans and vision.
- Recruit and retain faculty and staff to build the academic profile of TWFHC and the recruitment of clinical and translational scientists positioned to lead our field.
- Lead a culture of research mentorship: help accelerate investigators' progress towards independence and eliminate barriers to successful extramural funding
- Lead alignment of research resources, protected faculty time, research metrics and accountability to achieve desired research goals.
- Create and maintain a robust training / educational program for grant education, development, submissions and awards specific to pediatric cardiac science.
- Develop the research enterprise in a manner that is integrated seamlessly with the clinical enterprise, thus facilitating synergies and enabling clinicians and scientists to work together to identify and address clinically relevant problems.
- Serve as a liaison with the Children's Mercy Research Institute (CMRI) to ensure collaboration both at the operational and strategic levels.
- Work with Heart Center leadership to develop staffing and budgetary plans and to monitor the financial performance of the program.
- Work with the Department of Philanthropy to identify sources of philanthropic support.
- Regularly assess research staffing to ensure capacity and adequacy to achieve the research mission.

Candidate Profile

The ideal physician candidate should be board-certified or board-eligible in Pediatric Cardiology; PhD candidates should have a career focus on pediatric cardiac research. Applicants' current academic rank could range from Assistant Professor to Professor. Familiarity with federal funding and/or industry / foundation sponsored clinical trials is required. We value prior experience as a Principal Investigator or Project Director under federal grants or cooperative agreements, familiarity with award processes, experience as a PI on industry sponsored clinical trials and/or investigator initiated research, and/or knowledge of regulatory requirements of the FDA, GCP, and applicable IRB/IACUC requirements.

The successful applicant must share our unwavering commitment to excellence, integrity, collegiality, antiracism, and respect for inclusion of individuals with diverse backgrounds. They should have experience with leading teams. Desired style and personality traits include flexibility, creativity, transparency, accessibility, thoughtfulness, insight, confidence, fairness, humility and commitment to diversity, equity and inclusion. LEAN experience is preferred; CMKC is fully committed to LEAN, and provides a wide range of LEAN training opportunities. Potential resources include startup funding, CMRI space, and the recruitment of faculty and staff.

Please refer to the Appendix for additional details regarding the Children's Mercy Research Institute, TWFHC clinical and research program, funding and academic productivity.

EEO Employer/Disabled/VE

Please submit CV and cover letter to:
<https://faculty-childrensmercykc.icims.com/jobs/26738/physician/job>
 Or send to physicianjobs@cmh.edu



Outpatient Imaging Cardiologist

The Ward Family Heart Center at Children's Mercy Kansas City seeks a pediatric cardiologist at the assistant or associate professor level who would have equal roles in echocardiography and general outpatient cardiology. The successful candidate would join an existing group of 28 cardiologists (25 in Kansas City, 2 in Wichita, KS and 1 in Topeka, KS), 4 CV surgeons, 30 APNs. Experience and interest in peri-operative and peri-procedural TEE is a must. Proficiency in 3D and stress echocardiography is preferred. Training/knowledge in MR/CT imaging is preferred but not required. Trainees in their final year are welcome to apply. In addition to providing echocardiography coverage, the successful candidate will be expected to spend one-two days per week in our local general outpatient clinics and serve as attending on cardiology inpatient or consult service 4-6 weeks/year. Candidates must be board-certified or board-eligible in Pediatric Cardiology. Strong communication skills are key. There are ample opportunities for clinical/translational research and teaching (medical students, residents and Pediatric Cardiology fellows). Salary and academic rank are commensurate with experience.

Our Heart Center serves a population of over 5 million in the heart of the U.S.A. We perform over 500 cardiac operations, 600 cardiac catheterizations including over 200 invasive EP procedures, 18,000 outpatient visits, and more than 20,000 echocardiograms annually. Our two state-of the art catheterization labs are both hybrid labs and equipped with the latest 3D imaging and EP technology. Telehealth is available and facilitates our outreach clinics. We have video-conferencing capabilities that are routinely used by providers from distant locations to dial into our conferences for patient care and education. In 2022, the Ward Family Heart Center program was ranked #19 nationally by USNWR.

Our super-specialty resources include Electrophysiology (which includes Clinical EP, pacing and Genetic Arrhythmia), Cardiac Transplantation/Heart Failure, Interventional Cardiology and Advanced Cardiac Imaging (fetal echo, 3D echo, trans-esophageal echo, CT, MRI and 3D printing). We also provide specialized, team-based care in Fetal Cardiology (with on-site delivery services for high-risk neonates), Interstage Monitoring (CHAMP), Preventive Cardiology, Cardiac Genetics, Cardio-oncology, Single Ventricle Survivorship, Pulmonary Hypertension, a dedicated POTS clinic and Cardiac Neurodevelopmental Services.

The successful applicant must share our unwavering commitment to excellence, integrity, collegiality, antiracism, and respect for inclusion of individuals with diverse backgrounds.

Please apply with CV and Cover Letter using link below or send to physicianjobs@cmh.edu
<https://faculty-childrensmercykc.icims.com/jobs/24847/physician/job>

For additional information please contact:

Aliessa Barnes, MD

Co-Director, Ward Family Heart Center

Chief, Section of Cardiology

P. 816.983.6225

apbarnes@cmh.edu

Children's Mercy Kansas City is an independent, non-profit, 390-bed pediatric health system, providing over half a million patient encounters each year for children from across the country. Children's Mercy is ranked by U.S. News & World Report in ten specialties. We have received Magnet® recognition five times for excellence in nursing services. In affiliation with the University of Missouri-Kansas City and the University of Kansas, our faculty of nearly 800 pediatric specialists and researchers are actively involved in clinical care, pediatric research and educating the next generation of pediatricians and pediatric subspecialists.

The Children's Mercy Research Institute (CMRI) integrates research and clinical care with nationally recognized expertise in genomic medicine, precision therapeutics, population health and health care innovation. In 2021, the CMRI moved into a nine story, 375,000 square foot space emphasizing a translational approach to research in which clinicians and researchers work together to accelerate the pace of discovery that enhances care. We invite you to visit Children's Mercy Hospital virtually at cmkc.link/PhysicianTour

For more information about Children's Mercy Kansas City and about Kansas City itself, visit cmkc.link/TakeYourPlace.

Kansas City is a thriving cultural and economic city with more than 2 million residents. Our city's long list of attractions includes world class museums, a vibrant arts scene, professional sports, superb shopping, great jazz clubs, and the best places to enjoy barbeque! The city offers low cost-of-living, excellent commute times, and a vibrant downtown, eight-block dining, entertainment and shopping district. Kansas City offers excellent opportunities for both public and private school venues and is home to several colleges and universities. It's a community with a heart – friendly, easy-going and forward-thinking – a great place to live and pursue a career.

For more information about activities in Kansas City go to: www.visitkc.com

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