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# A Tried-and-True Innovation Process Applied to Pediatric Congenital Heart Disease

*Beverly Tang, PhD; Kathryn Olson, MEng; Mark Juravic, MEng*

## Introduction

Starlight Cardiovascular was founded in 2020 by a team of dedicated MedTech industry veterans to serve the unmet needs of pediatric patients born with Congenital Heart Disease (CHD). The company's mission is to help babies born with CHD by developing best-in-class devices alongside pediatric cardiologists and surgeons. Starlight is currently developing a purpose-built Ductus Arteriosus Stent System and a percutaneous Pulmonary Flow Restrictor. In this article, we present a case study of how the Stanford Biodesign Innovation Process was applied to this clinical space to develop a device for the ductus arteriosus.

## The Stanford Biodesign Innovation Process

The Stanford Biodesign Innovation Process is a tried and true clinical-needs-first methodology that was developed, practiced, and improved over the last 20+ years by physician entrepreneurs Drs. Paul Yock, Josh Makower, Tom Krummel, and a team of others to advance health outcomes. The program trains over 300 people each year through courses, executive education, faculty and global training, and the flagship Biodesign Innovation Fellowship program. Millions of patient lives have been impacted by the solutions developed within the program. At the core of Biodesign is the idea that **impactful innovation begins with a well-validated unmet clinical need**. Many MedTech companies often start their innovation process with a technology solution already in mind, trying to fit this technology into solving a clinical need and resulting in a mismatched solution. By starting with a well-validated clinical need instead, innovators can save time, money, and resources in designing a solution that is uniquely suited to address the unmet needs before going down the arduous path of developing a technical solution.

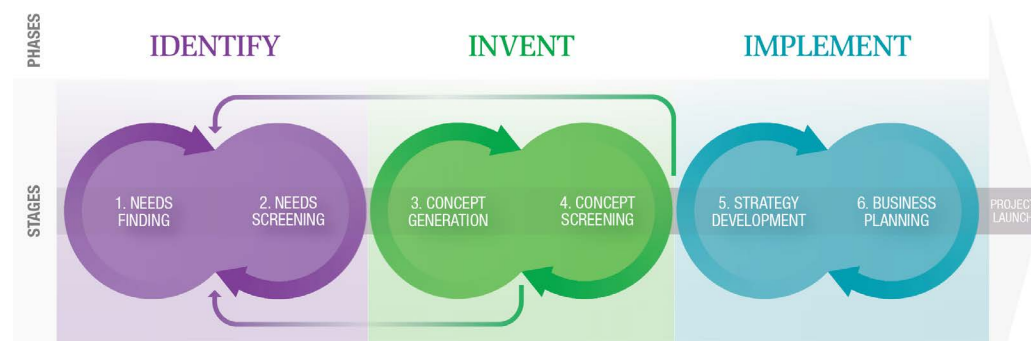


FIGURE 1 Stanford Biodesign Innovation Process

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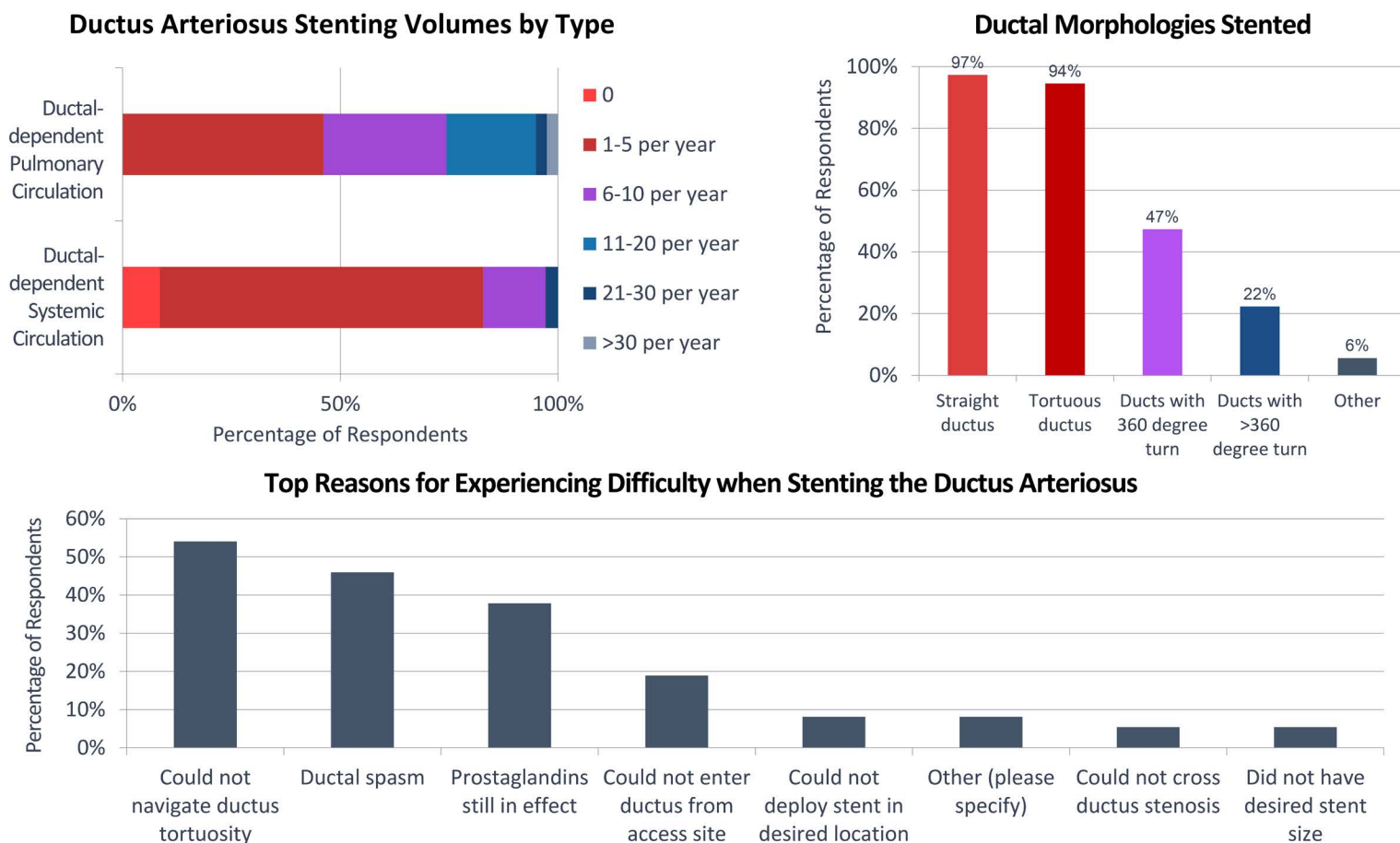
**What is an unmet clinical need?** Oftentimes, it is easy to confuse a solution with an unmet need (“We all need a bioresorbable stent!”). A true unmet need, in its purest form, consists of a recurring problem, the population that the problem affects, and the desired outcome that would be achieved with a new solution. The need is completely solution-agnostic and drives toward an insight that results in more effective concept generation.

**How are unmet needs found?** At Stanford, the needs-finding process starts with clinical observation. This ethnographic research technique allows innovators to watch problems directly and develop empathy for the challenges faced by patients and providers. Starlight was founded in March of 2020, when the world locked down due to the COVID-19 pandemic. Getting into hospitals for case observations was not possible, so our team watched live cases from conferences, attended clinical webinars, scoured the clinical literature, spoke to a number of interventional cardiologists and cardiovascular surgeons, and reviewed individual cases with these physicians, leading to finding over 50 unmet clinical needs in the area of pediatric CHD. (We know now that there are plenty more!)

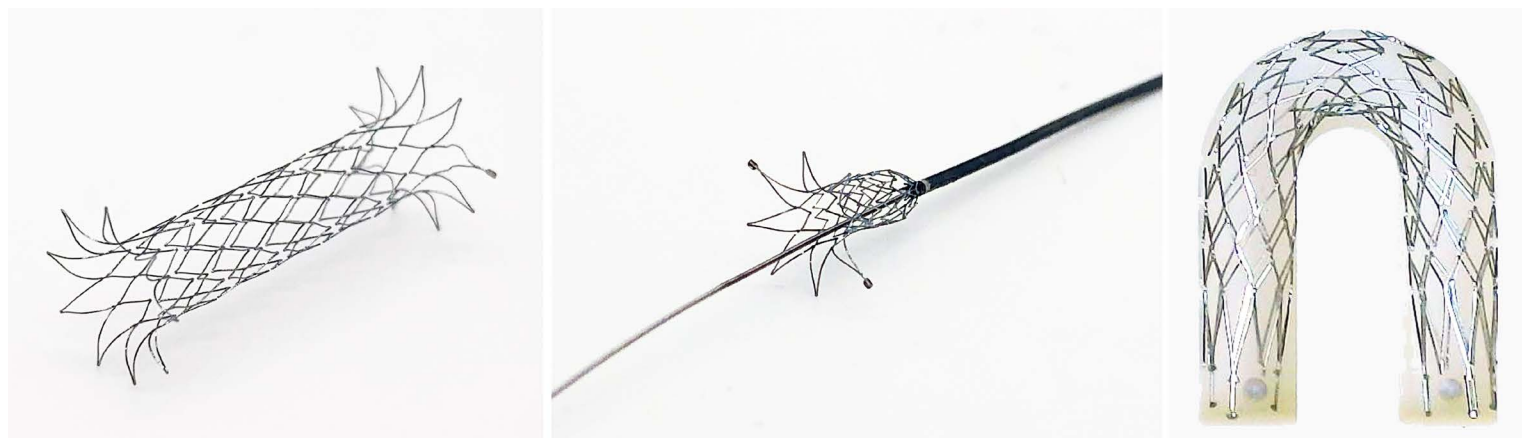
**What do you do with all of these needs?** Once a set of compelling unmet needs are identified, a needs screening process is undertaken to ensure an unbiased process of narrowing down to the most impactful needs to be solved.

One of the true merits of the Biodesign process is the ability to remove bias from innovation: it is easy to fall in love with a certain need or solution, but to be worth working on, it should make it through the rigorous “competition” that the process requires. Starlight started with those 50+ unmet clinical needs and used filters such as patient impact, clinical risk, and opportunity size to prioritize the list of needs and decide on which ones to address first.

**But how do I know it really is a good need?** Another major component of the process is constant validation of one’s understanding of the needs. Need validation ensures that the clinical need that has been identified is relevant to a large enough number of cases and clinicians to warrant solving the problem and that the root cause of the problem is well enough understood to identify a feasible solution. This need validation can be done through a broader set of clinical interviews, surveys, and/or a more systematic literature review. As an example of need validation, we present herein some of the results from a ductus arteriosus stenting survey conducted by Starlight in 2021. The process of need validation often brings out some of the true insights surrounding a need and can result in changing the details of the need, such as the applicable patient population or the specifics of the desired outcome.



**FIGURE 2** Results from a 2021 survey conducted amongst 45 interventional cardiologists regarding their PDA stenting practice.



**FIGURE 3** Starlight prototype self-expanding ductus arteriosus stent [left]. Stent being delivered through a 0.027" microcatheter [middle]. Stent flexibility / kink resistance [right].

## Need Validation Example: Ductus Arteriosus Stenting Survey Results

To validate the clinical need for developing a solution to provide systemic or pulmonary blood flow in a way that reduces the morbidity associated with surgical procedures such as BTT shunting, a survey of 45 pediatric interventional cardiologists was conducted via the CCISC listserv. The results of the survey illustrated that this problem was important to address and that the technical needs among operators performing ductal stenting were similar.

Of the interventional cardiologists surveyed (84% US, 16% from outside the US), almost half of them were stenting between one and five patients with ductal-dependent pulmonary circulation per year, with slightly lower stenting volumes for ductal-dependent systemic circulation. Almost all were stenting straight and tortuous PDAs, and 47% were stenting ducts with a full 360 degree turn. The top reasons that were given for experiencing difficulty when stenting were the ability to navigate ductus tortuosity, ductal spasm, and the presence of prostaglandins.

**I have a great need – now what?** Once a need has been identified, prioritized via unbiased screening, and validated, concept generation can begin. Based on the Biodesign process and the survey results, Starlight started to narrow down that a ductus arteriosus stent system that is easier and safer to deliver would be a good problem for this small start-up to tackle. Through the iterative process of concept generation, screening, design, and testing, we determined that many of the identified challenges with ductal stenting could be addressed with a self-expanding stent delivered through a microcatheter. This type of design could enable safer and more precise stent delivery by facilitating navigation through tortuous vessels, providing a flexible stent that matches the stent length to the ductus length more precisely, and having stent anchoring features that could allow for stent delivery while the patient is still on prostaglandins. To test these theoretical benefits in the wide range of possible PDA anatomies, we partnered with Stanford, UCSD, and Nationwide to build a library of patient-specific 3D

anatomic models from pre-op CTs of stented patients. These 3D anatomic models represent the most common tortuosities and ductus origins identified by Qureshi et al<sup>1</sup>. In addition, an acute animal study in a neonatal lamb model was recently performed that demonstrated early proof-of-concept.

## Conclusion

It is well known that less than 25% of MedTech start-ups succeed,<sup>2</sup> and bringing a novel device to market is a formidable task. While using the Biodesign Innovation Process does not guarantee success, it does provide a framework that reduces risk and prevents misdirected efforts at the earliest stages of MedTech innovation. It is a process that can be learned, taught, and continuously practiced; and physician innovators and seasoned entrepreneurs alike have reaped the benefits of the process. Because Starlight's mission is to help babies born with Congenital Heart Disease by developing best-in-class devices **alongside** pediatric cardiologists and surgeons, we openly welcome engagement and feedback. It is imperative to us that we have identified important clinical needs, that these needs are well-validated, and that our solutions will serve the patient and physician for whom they were designed.

*The development of Starlight's Ductus Arteriosus Stent System was supported in part by the Food and Drug Administration (FDA) of the U.S. Department of Health and Human Services (HHS) as a part of three Financial Assistance Awards (FAIN) totaling \$90,000 and the National Heart, Lung, and Blood Institute of the National Institutes of Health under award number R43HL158304 with funding totaling \$492,571. The content is solely the responsibility of the authors and does not necessarily represent the official views of, nor an endorsement by, the FDA/HHS, National Institutes of Health, or U.S. Government.*

## References

1. Qureshi AM, Goldstein BH, Glatz AC, et al. "Classification scheme for ductal morphology in cyanotic patients with



**Driscoll**  
Children's Hospital

## ***NEW Opportunity*** **Chief of Pediatric Cardiac Intensive Care**

Driscoll Children's Hospital – Heart Center in Corpus Christi, Texas, is recruiting an experienced leader with a commitment to excellence to serve as Chief of Pediatric Cardiac Intensive Care. The ideal candidate, MD/DO, will be dual boarded by the American Board of Pediatric Critical Care Medicine and Pediatric Cardiology and have at least five (5) years of post-fellowship experience in pediatric cardiac critical care and proven history in a leadership role with vision and strategic planning.

The Driscoll Heart Center team includes inpatient and outpatient cardiologists specializing in Echo, Fetal, CMR, Imaging, electrophysiology, interventional cardiology, congenital cardiac surgeons, cardiac anesthesiologists, and intensivists. As a result of our rapid growth and expansion the CICU will increase to 34 dedicated beds in the next eighteen months.

Successful applicants will enjoy a highly competitive compensation package, sign-on bonus, comprehensive medical benefits, disability and life insurance, retirement plans, generous paid vacation days, paid holidays, CME allowance & days off, and malpractice insurance.

### **About Driscoll Children's Hospital**

Driscoll Children's Hospital is a 191-bed pediatric tertiary care center with pediatric specialists representing 32 medical and 13 surgical specialties offering care throughout South Texas, including Corpus Christi, the Rio Grande Valley, Victoria, and Laredo. The hospital remains the only, free-standing children's hospital in South Texas with the first emergency room created specifically for pediatrics. The hospital provides comprehensive pediatric services including NICU, PICU, and more than 40 pediatric subspecialists. Driscoll Children's Hospital maintains a teaching affiliation with Texas A&M University Health Science Center and has a pediatric residency (45 plus residents).

### **About Corpus Christi, Texas**

Corpus Christi, Texas is a wonderful place to work, live and play! It is a dynamic coastal city that offers great schools, K- 12 (five independent school districts within the city) and higher education, Texas A&M University -Corpus Christi and Del Mar College and Coastal Bend College. The cost of living is low and there is no state income tax. Corpus Christi is currently ranked as one of the most affordable places to buy a home in the USA. The mild climate allows for year-round outdoor fun. Enjoy miles of beaches, parks, hiking/biking trails, shopping, dining, festivals, sporting events and more.

### **Apply Today!**

**[Lori.smith@dchstx.org](mailto:Lori.smith@dchstx.org)**

*Director of Physician Recruitment*

361.694.5906 – direct line



ductal dependent pulmonary blood flow and association with outcomes of patent ductus arteriosus stenting."

Catheter Cardiovasc Interv. 2019;93(5):933-43

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**KATHRYN OLSON, MEng**

*Starlight Cardiovascular*



**BEVERLY TANG, PhD**

*Starlight Cardiovascular*  
9710 Scranton Road, Suite 100  
San Diego, CA 92121  
[bev@starlightcardio.com](mailto:bev@starlightcardio.com)



**MARK JURAVIC, MEng**

*Starlight Cardiovascular*



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## Medical Director, Pediatric CVICU

The Congenital Heart Center at Levine Children's Hospital (LCH), in association with the Wake Forest University School of Medicine and Atrium Health Wake Forest Baptist (AHWFB), is accepting applications for a Cardiac Intensivist academic faculty position at the rank of Associate Professor or Professor (non-tenure, clinical track) to serve as Medical Director of the Cardiac Intensive Care Unit at the Brenner Children's Hospital campus in Winston-Salem, NC.

For the Cardiac Intensive Care Unit, this medical director will work with the Heart Center Co-Directors to develop, coordinate, and integrate a team approach, unifying cardiovascular surgeons, intensivists, anesthesiologists, cardiologists, and advanced practice providers across both campuses. Additional responsibilities include recruitment, training, and development of new CICU staff as well as fostering academic productivity and professional development of its faculty and trainees and continue our participation in national registries such as the Pediatric Cardiac Critical Care Consortium (PC4).

In early 2022, Atrium Health announced the formation of a Joint Heart Program, unifying pediatric heart programs at Levine Children's Hospital, Charlotte, and Brenner Children's Hospital, Winston-Salem. Our comprehensive services include cardiac imaging, diagnostic and interventional catheterization, invasive electrophysiology, dedicated cardiovascular intensive care staff, and regional referral programs in heart failure/transplantation, adult congenital heart disease, and fetal echocardiography. We have one of the most comprehensive Cardiac Neurodevelopment programs in the Southeast, providing a multitude of specialty services to our congenital heart patients in the same office suite. Across two campuses, the team currently includes 18 cardiologists, 3 congenital heart surgeons, 5 cardiac intensivists, 5 pediatric cardiac anesthesiologists, 2 pediatric cardiac radiologists, 22 APPs (includes 3 surgical ACPs), 21 sonographers, 6 nurse navigators, and 9 dedicated RNs.

Wake Forest University School of Medicine, the academic core of Atrium Health Enterprise, is the medical education and research component of Atrium Health Wake Forest Baptist. The academic health system is comprised of an 885-bed tertiary-care hospital in Winston-Salem – that includes Brenner Children's Hospital, five community hospitals, 300 plus primary and specialty care locations, and more than 2,700 physicians. Brenner Children's Hospital is the home of a 10-bed PICU with nine pediatric intensivists, 2 APP's, an ECMO center and active participation in ELSO and VPS.

Located in the Piedmont Triad region of North Carolina, Winston-Salem is the state's fifth largest city and named one of "The South's Best Cities on the Rise 2021" by Southern Living. It is also the home of Innovation Quarter, a culturally diverse and creatively rich community focused on research, business and education in biomedical science, information technology, digital media, clinical services, and advanced materials.

Requirements: MD or equivalent, the ideal candidate would be board certified in pediatric critical care, pediatric cardiology, or equivalent appropriate subspecialty with additional training or work experience in pediatric cardiac critical care OR board certified in both pediatric critical care medicine and pediatric cardiology. This applicant should possess leadership experience and a rank of at least Associate Professor and embrace the tripartite missions (clinical, research and education) of Wake Forest University School of Medicine.

**Applicants should submit a cover letter and curriculum vitae.**

**Contact Information:**  
Jackie Aubert  
Sr. HR Consultant, Talent Acquisition  
[jaubert@wakehealth.edu](mailto:jaubert@wakehealth.edu)

*Atrium Health and the Wake Forest University School of Medicine are Affirmative Action and Equal Opportunity Employers with a strong commitment to achieving diversity among its faculty and staff.*



# PICS 25<sup>th</sup> Anniversary Symposium Chicago – Together Again



PICS Founder & FPICS Member #1, Ziyad M. Hijazi, MD, MPH, FPICS.



Prof. Hijazi with Fellows/Early Career Course Directors Drs. Darren Berman and Vivian Dimas. Advanced training for the profession's future leaders.



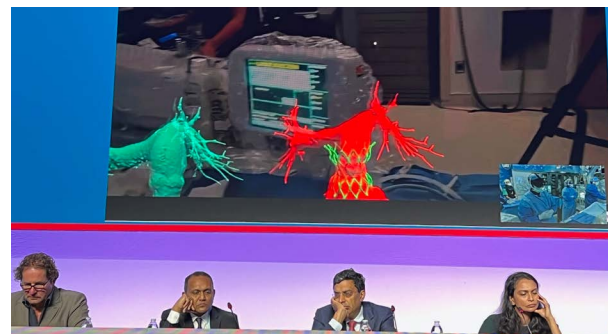
Dr. Alan Ligon and Fellows/Early Career physicians. This year's Symposium featured many hands-on "learn by doing" opportunities via simulators and technology demonstrations.



Thank you Fellows-in-Training & Early Career Course participants, and thank you to the world class faculty and to our visionary sponsors.



Dr. Maiy H. El Sayed, Aim Shams University Cairo, leading the first PICS live case from Egypt. Thank you Dr. El Sayed and your distinguished team for a superb teaching & learning experience!



This year's live cases featured the latest technologies and techniques to provide the best patient care possible. Virtual reality advances (shown here) to model and prepare for highly complex procedures.



Members of the 25<sup>th</sup> Anniversary Symposium Planning Committee. Honored to recognize this year's PICS Achievement Award Winners (with plaques): Professors Mazen Alwi, Bharat Dalvi and Carlos Pedra. Congratulations and thank you all!



PICS Society Board member Dr. Jacqueline Kreutzer and Early Career Committee Chair Dr. Aimee Armstrong, 3D/3 Advanced Imaging Program Co-Chair.



New PICS Working Group on Humanitarian Activities. Dedicated to the Society's mission: A world where anyone who can benefit from minimally invasive techniques to treat CHD has access to safe, effective care. From left: Drs. Bharat Dalvi (Chair), Zahid Amin, Sir Shakeel Qureshi and Mario Carminati.



Faculty of this year's well-attended Nursing & Associated Professionals Program. From left: Jamil Aboulhosn MD, Sharon Cheatham PhD, Gregor Krings MD, Emily Kish BSN RN and Curtis (Terry) Alford MSN.



After more than two years of virtual meetings and limited travel, this year's Symposium provided countless opportunities for friends to reunite. Shown: Sir Shakeel Qureshi (London, England) and Dr. Makram Ebeid (Jackson, MS USA).



Simone Pedra, Alejandro Peirone, MD, and Carlos AC Pedra, MD, PhD.



The PICS Society is so grateful for the partnership of the Congenital Cardiology Today (CCT) team, Loraine Watts, Kate Baldwin and Tony Carlson. CCT is the official News & Information Partner of the PICS Society.



Congratulations to Dr. Sharon Borik, co-recipient of the 2022 PICS Young Leadership Award. (Not shown: Dr. Arash Salavitarab, 2022 co-recipient).



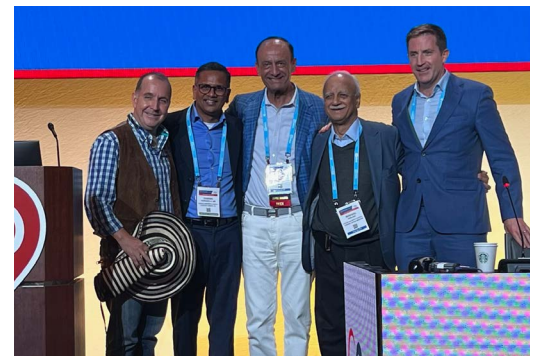
PICS Special Recognition Award to our Senior Patient Advocate, Natalie Poli, Ed. S., who has worked tirelessly to advocate on behalf of CHD patients and their families worldwide. Thank you, Natalie! With (from left) Drs. Terry King, Damien Kenny, Ziyad Hijazi, Carlos Pedra and Tom Jones.



We were honored to have Prof. Ahmet Çelebi (on left), Chief of Cardiology, Siyami Ersek Hospital) as a distinguished faculty member of the PICS Chicago Symposium. On to PICS Istanbul 2023 (March 15th-18th).



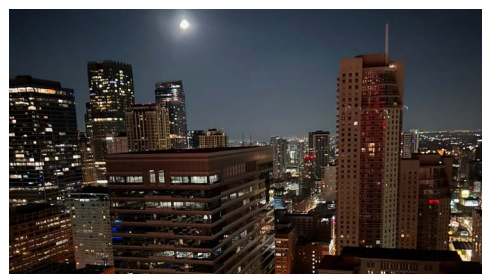
The work never stops! Thank you to our hard-working staff led by PICS Deputy Executive Director Kimberly Ray, RN. Ms. Michaelleen "Mike" Wallig (PICS Financial Director) shown here at Symposium 2022 Mission Control. Mike has staffed all 25 PICS Symposia!



Dr. Manuel Ricardo Tellez Alvarez (on left, Bogota, Colombia), the winner of this year's "My Nightmare Case in the Cath Lab." Thank you Doctor and all the contestants for your honesty and dedication to excellence in patient care.



The team that made it happen. Middle row, 4th from left: our MVP, Ms. Kimberly Ray—thank you Kim for your hard work!



Chicago was the perfect setting for our "back together again" meeting. See you all at PICS 2023, August 28th-31st in Washington DC.



## CAREER OPPORTUNITIES



### UPMC CHILDREN'S HOSPITAL of PITTSBURGH

The Heart Institute at UPMC Children's Hospital of Pittsburgh, one of the premier pediatric cardiology programs in the country, is currently recruiting for an outstanding leader for the position as the Director of Perinatal Cardiology, as well as two excellent candidates for the faculty positions of non-invasive cardiac imager with emphasis on fetal cardiac imaging, and an inpatient cardiac care (acute care).

The Heart Institute provides comprehensive pediatric cardiology 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, surrounding states, as well as national and international locations. Our group consists of 33 pediatric cardiologists, 5 pediatric cardiothoracic surgeons, 8 pediatric cardiac intensivists and 9 cardiology fellows along with 19 physician extenders and a staff of over 100. We are honored to be ranked **#3 nationally** and **#1 in Pennsylvania** for pediatric cardiology and heart surgery by U.S. News and World Report. Our Cardiothoracic Surgery Program, led by Dr. Victor Morell, is one of the top programs in the country, having held a 3-star rating from Society of Thoracic Surgery (STS) consistently over many years. 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.

### DIRECTOR OF PERINATAL CARDIOLOGY

- We are seeking a motivated and experienced individual to serve as the **Director of Perinatal Cardiology**. The current program is part of our non-invasive imaging section, led by Dr. Laura Olivieri. Over 1,500 fetal studies per year at our main Children's Hospital of Pittsburgh campus and affiliated sites. We currently have 4 fetal outreach locations throughout Western, PA. Our Perinatal Program collaborates closely with the UPMC Magee-Womens Hospital, which is the regional referral center for OBGYN patients, performing approximately 11,000 deliveries per year, with an active inpatient and outpatient program. The development of outreach fetal screening opportunities with a growing neonatal/MFM network will be a key component of this effort. Magee-Womens Research Institute & Foundation is an independent research institute and one of the largest in the nation that focuses on reproductive biology, and women's and infants' health. Since its inception in 1992, MWRI has been a leader in funding from the NIH and other sources. Opportunities are available to work with members of the MWRI on specific research projects.
- As a member of the division of pediatric cardiology and core imaging faculty, the Director of Perinatal Cardiology will also provide direct inpatient and outpatient care, read transthoracic and perform transesophageal echocardiograms. Additionally, this individual will participate in fellow, resident, and medical student teaching and have a demonstrated commitment to academic and clinical excellence in pediatric cardiology. Preference will be given to candidates with more than 5 years of post-fellowship cardiology experience, experience with developing a fetal cardiology program, and those with an interest and track record for academic success in fetal medicine.

### CARDIAC IMAGER

- We are seeking an exceptional individual with proficient skills in non-invasive imaging, including transthoracic echo, TEE, fetal imaging and counseling. Candidates must hold an MD/DO degree, be board certified/board eligible in pediatric cardiology and hold or be eligible for a Pennsylvania physician license. Prior faculty experience is welcome. Our non-invasive imaging program, led by Dr. Laura Olivieri, continues to expand our footprint in the region, and provides outstanding diagnostic imaging and image guidance for complex procedures. Our comprehensive fetal program coordinates over 1,500 fetal imaging and counseling sessions annually and includes opportunities for outreach as well as collaborative delivery planning for all levels of anticipated care following delivery. Other clinical responsibilities may include outpatient cardiology, or inpatient coverage depending on background and expertise.

### GENERAL PEDIATRIC CARDIOLOGIST/INPATIENT SERVICES

- We are seeking an exceptional individual with proficient skills in general pediatric cardiology, focused on inpatient acute care. Candidates must hold an MD/DO degree, be board certified/board eligible in pediatric cardiology and hold or be eligible for a Pennsylvania physician license. Prior faculty experience is welcome. The position will be clinically focused, as part of the inpatient cardiology subsection. Our Acute Care Unit, led by Dr. Evonne Morell, is staffed by general cardiologists and advanced practice providers, and has a long history of active participation in national QI initiatives and strong outcomes. Other clinical responsibilities may include outpatient cardiology, non-invasive imaging, or exercise physiology, depending on background and expertise.

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  
4401 Penn Avenue  
Pittsburgh, PA 15224  
Telephone: 412-692-6903  
E-mail: [Jacqueline.kreutzer@chp.edu](mailto:Jacqueline.kreutzer@chp.edu)



# Atrium Health Sanger Heart & Vascular Institute Marks Milestone Surgery

*Minimally invasive alternative to open heart surgery offering hope to more patients*

Atrium Health Sanger Heart & Vascular Institute has hit a milestone in heart care, having performed 2,022 transcatheter aortic valve replacements (TAVR). This procedure allows the TAVR team to replace the patient's aortic valve using a catheter-based approach instead of open-heart surgery.

Aortic stenosis, a condition that can require a TAVR procedure, occurs when calcium deposits form on the aortic valve, causing a buildup in the heart and lungs. The condition tends to affect patients over the age of 65, but it can also affect those who are middle-aged. Historically, the calcified valve was replaced using open-heart surgery.

"The problem is that many elderly patients aren't healthy enough for open-heart surgery," said Dr. Michael Rinaldi, interventional cardiologist and Medical Director of the Structural Heart Program at Atrium Health Sanger Heart & Vascular Institute. "Most patients want to avoid heart surgery when they can because it's a big commitment, with a lot of risk and recovery time involved."

TAVR has become the preferred therapy for patients with aortic stenosis, particularly for those over 70 years of age. The procedure is associated with low rates of mortality, stroke, bleeding and kidney failure. In addition, most TAVR patients can return home the next day to complete their recovery, which is much quicker compared to surgical recovery.

In addition to helping patients who do not qualify for heart surgery, TAVR can help patients who could have heart surgery, but would likely have a higher

mortality rate and spend considerable time in the hospital. It's also an alternative procedure for younger, healthier patients who are good surgical candidates, but want to return to their everyday lifestyles immediately after a valve replacement.

During the milestone procedure, the new valve was placed in a stent, which was inserted into the patient's leg artery using a catheter. The TAVR team, which included Rinaldi and cardiovascular surgeon Dr. Eric Skipper, tracked the catheter's pathway through the patient's circulatory system using X-ray cameras and placed it across from the narrowed aortic valve. Once in place, the stent was expanded, propping open the new valve.

Sanger Heart & Vascular Institute has been performing TAVR procedures for the past decade. The TAVR team pioneered technology that protects a patient from having a stroke during a procedure. By filtering out small particles during the valve replacement, the team at Sanger Heart & Vascular has been able to reduce strokes by 50%, leading to better patient outcomes within 30 days of the procedure.

"Aortic stenosis touches a lot of people's lives, and TAVR can dramatically improve their survival rate," said Rinaldi. "We've refined this therapy over time to become something that is very safe and effective."

Dr. John Fredrick, Chief of the Division of Cardiovascular Surgery at Sanger Heart & Vascular Institute, says they have been the busiest TAVR center in the Carolinas since the valve became commercially available 10-years ago.



**Atrium Health**

"That's important because a multitude of studies show that higher volumes translate to better quality and a lower risk of complications," said Fredrick.

Because of this experience, the TAVR team was selected by Edwards Lifesciences to host a training course for providers from other regional valve replacement programs. During the course, the providers learned how to improve the efficiency of TAVR procedures.

Atrium Health Sanger Heart & Vascular Institute's TAVR program has earned the 5-star program rating from U.S. News & World Report, making it one of only three centers to receive this designation in the Carolinas. It also received a 3-star rating, the highest possible designation from the Society of Thoracic Surgeons/ American College of Cardiology Transcatheter Valve Therapy Registry. The TAVR program is one of only a small number of programs in the U.S. to receive the highest ratings from both organizations.





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# Cardiac Critical Care Faculty

The **Heart Center at Nationwide Children's Hospital (NCH)** seeks a **Cardiac Intensivist**, at any academic rank, to join its growing and dynamic program.

Candidates must have completed fellowship training in pediatric cardiology and/or critical care that included advanced cardiac intensive care training. Preference will be given to those who are boarded in pediatric cardiology and interested in an academic center with research and leadership opportunities for the candidate's professional growth.

The successful applicant will join a group of nine multi-background academic cardiac intensivists and twelve dedicated nurse practitioners devoted to the CTICU, providing 24/7 in house coverage. Our free-standing CTICU is a 20 bed unit with 600 admissions per year (medical and surgical); an average daily census of 12. The Heart Center's comprehensive services include hybrid palliation, comprehensive single ventricle program, thoracic organ transplantation, blood conservation strategies, and cardiac mechanical support. Current annual clinical metrics include: over 400 cardiothoracic surgeries, over 700 cardiac catheterizations and EP procedures, and over 20,000 cardiology outpatient visits. We have a pediatric and pediatric/adult combined cardiology fellowship programs.

The Heart Center embraces a culture of patient safety and quality, transparency, value-based care, public health awareness, excellence in education and engagement in translational/outcomes research. Our program is closely partnered with the Center for Cardiovascular Research at the NCH-Research Institute which provides infrastructure to support the clinical research enterprise. Research opportunities include engaging in basic science research, clinical research, translational research, population based studies, and research-based education or quality improvement initiatives.

The Heart Center is also part of the Congenital Heart Collaborative between the University Rainbow Babies & Children's Hospital (Cleveland, OH) and Nationwide Children's Hospital heart programs which provides additional opportunity for collaborative research.

Named to the Top 10 Honor Roll on U.S. News & World Report's 2021-22 list of "Best Children's Hospitals," Nationwide Children's Hospital is one of America's largest not-for-profit free-standing pediatric health care systems providing unique expertise in pediatric population health, behavioral health, genomics and health equity as the next frontiers in pediatric medicine, leading to best outcomes for the health of the whole child. Integrated clinical and research programs, as well as prioritizing quality and safety, are part of what allows Nationwide Children's to advance its unique model of care. Nationwide Children's has a staff of more than 13,000 that provides state-of-the-art wellness, preventive and rehabilitative care and diagnostic treatment during more than 1.6 million patient visits annually. As home to the Department of Pediatrics of The Ohio State University College of Medicine, Nationwide Children's physicians train the next generation of pediatricians and pediatric specialists. The Abigail Wexner Research Institute at Nationwide Children's Hospital is one of the Top 10 National Institutes of Health-funded free-standing pediatric research facilities. More information is available at [NationwideChildrens.org](https://www.NationwideChildrens.org).

To learn more about Nationwide Children's or apply for this position visit us at: [NationwideChildrens.org/physician-careers](https://www.NationwideChildrens.org/physician-careers)

Candidates may submit their curriculum vitae by email to:

**Janet Simsic, MD**

**Director, Cardiothoracic Intensive Care Unit**

[Janet.Simsic@nationwidechildrens.org](mailto:Janet.Simsic@nationwidechildrens.org) or

**Robert Gajarski, MD, MHSA**

**Section Chief, Pediatric Cardiology**

**The Heart Center at Nationwide Children's Hospital**

[Robert.Gajarski@NationwideChildrens.org](mailto:Robert.Gajarski@NationwideChildrens.org)

All inquiries and referrals will remain confidential.



# Aortic Valve Replacement Market Size is Projected to Reach USD 33.51 Billion by 2030, Growing at a CAGR of 14%, According to Straits Research

*Europe is leading the global aortic valve replacement market with a market value of USD 3,535 million in 2021 and is expected to grow to USD 9,117 million by 2030 at a CAGR of 11%. The global aortic valve replacement market size was valued at USD 10,722 million in 2021 and is expected to grow at USD 33,516 million by 2030. The market is expected to grow at a CAGR of 14% during the forecast period (2022–2030).*

The main thing driving the aortic valve replacement market is the growing number of valvular diseases like aortic stenosis and aortic regurgitation, as well as technological advances in the heart valve market. Aortic stenosis is the most common disease of a valve that affects older people.

A big reason why this market segment is growing is because there are more and more older people. The number of older people is expected to grow from 962 million in 2017 to 2.1 billion in 2050, which is how many people are expected to live on Earth at that time. The market is also expected to grow in the next few years because of the rise of minimally invasive surgeries like TAVR and the development of valves that do not need stitches. Several things are being done to let people know about aortic valve replacement, which is expected to have a positive effect on the market in the coming years.

## **Rising Prevalence of Valvular Diseases and Initiatives for Creating Awareness of Valve Replacement with Favorable Reimbursements to be the Key Drivers for the Market Growth**

Aortic regurgitation is another valve disease that can only be fixed with surgery (Aortic Valve Replacement, or AVR). This problem happens more often as people get older. Aortic regurgitation is usually caused by rheumatic heart disease. Rheumatic heart disease is a type of heart inflammation that goes on for a long time. The World Health Organization (WHO) says that about 2% of people with cardiovascular diseases (CVDs) have rheumatic heart diseases. So, the growing number of rheumatic heart diseases is likely to have a positive effect on the market in the coming years.

With the new techniques and treatment options available to cure or operate on a patient, more people are learning about them and getting referred to better care. Based on the numbers released by Medicare and Medicaid, the number of people over 65 with aortic stenosis is growing quickly. In 1989, there were only 2,500 people with this condition, but in 2011, there were over 32,000. One of the main things that will drive the aortic valve replacement market in the next few years is the growing number of aortic valve surgeries done on older people.

Along with this, good insurance and reimbursement policies are expected to be one of the most important things that will drive the market in the coming years. For instance, the Centers for Medicare and Medicaid Services (CMS) said that the Medicare National Coverage Determination policy would cover TAVR. When it comes to how much they will pay for different procedures, different insurance companies have different rates. A heart valve replacement is a serious illness. How much you get back depends on how much are insured. Because of these and other things that make people aware of it, the market is growing.

## **Development of Sutureless Valves to Create Huge Opportunities in the Global Aortic Valve Replacement Market**

Transcatheter aortic valves are used a lot because more and more people want surgeries that are not as invasive. Transcatheter valves are getting more research and development, and more people all over the world are learning about TAVR. Key players in this market have done a number of clinical studies to test the safety, effectiveness, and range of interventions. Even though sutureless valves are not used very often, they offer a big chance for growth because they have so many benefits. Sutureless valves show good hemodynamic and post-surgery results and have a lower death rate.

Only the Enable 3F, the Perceval, and the Edwards Intuity Valve System have been put on the market without sutures. But there are a number of sutureless valves in development that could help the field of sutureless valves grow even more. The rest of the valves are made of tissue valves and valves that are made of metal. There are already a lot of these valves on the market, but their growth is limited because new technologies like TAVR are coming out. With mechanical and tissue heart valves, developing economies have more room to grow than economies that are already doing well, which opens up huge opportunities.

## **Regional Analysis of the Global Aortic Valve Replacement Market**



Department of Pediatrics  
UNIVERSITY OF WISCONSIN  
SCHOOL OF MEDICINE AND PUBLIC HEALTH

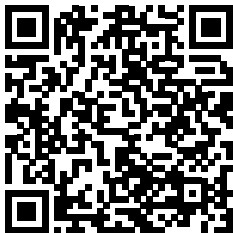
# Pediatric Interventional Cardiologist



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*Professor of Pediatrics  
Chief, Pediatric Cardiology  
University of Wisconsin School of  
Medicine & Public Health*

(608) 262-1603  
[jcralphe@pediatrics.wisc.edu](mailto:jcralphe@pediatrics.wisc.edu)

The Department of Pediatrics at the University of Wisconsin School of Medicine and Public Health is recruiting for a full-time **Pediatric Interventional Cardiologist** to join its Division of Pediatric Cardiology.

The Congenital Heart Program is a dynamic and growing service that is a recognized leader in the field, providing outstanding care from fetal life through adulthood. Diagnostic and interventional cardiology services are provided in a state-of-the-art hybrid lab supported by two cardiothoracic surgeons, 20 cardiologists and advanced practice providers, outstanding non-invasive imaging services, cardiac anesthesiologists, and intensivists. The program is notable for its highly collaborative and inclusive culture with a focus on team and individual excellence in the pursuit of remarkable care for our patients and their families.

The Department of Pediatrics is a vibrant academic department comprised of more than 200 faculty in 17 subspecialty divisions. The department offers a full range of pediatric inpatient and outpatient care at the UW Health Kids' American Family Children's Hospital, community hospitals, and outreach clinics statewide. The University of Wisconsin-Madison provides a highly acclaimed academic environment that actively supports research and innovation.

The successful candidate must hold an MD or equivalent and have completed a US pediatric residency, pediatric cardiology fellowship, and additional training in interventional cardiology. Interest in academic medicine, involving teaching a variety of learners, is essential. Identification and the nurturing of future clinician-scientists is a high priority. Applicants with developing academic interests will be given careful consideration. WI medical licensure; BC/BE in pediatric cardiology required.

The University of Wisconsin-Madison is known for its beautiful lakeside setting, top-rated record of federal research funding, and excellence in teaching at all levels. The city of Madison (pop. 263,332) is the state capitol and boasts a high quality of life, including excellent schools, housing, clean air, and abundant year-round recreational and cultural opportunities.

[pediatrics.wisc.edu/careers](http://pediatrics.wisc.edu/careers)



The global aortic valve replacement market is mostly split into North America, Europe, and Asia-Pacific. Europe has the largest market share among the other regions and is the leader in regional segmentation.

### North America

After Europe, North America is the second most important region for the aortic valve replacement market in terms of revenue. North America is known for having the most advanced healthcare facilities, and it is expected to grow at a rate of 10% over the next few years.

### Europe

Europe leads the world market for aortic valve replacement. In 2021, the market in Europe was worth USD 3535 million, and it is expected to reach USD 9117 million by 2030, at a CAGR of 11%. The high number of people with aortic stenosis, the development of effective treatments like TAVR, and more efforts to raise awareness about valve replacement surgeries are some of the main reasons why this market is growing.

### Asia-Pacific

The Asia-Pacific region is third on the list, with a CAGR of 14% from 2022 to 2030. This means that the Asia-Pacific region has the highest growth rate of all the regions. With this rate of growth, the Asia-Pacific region will soon lead the global aortic valve replacement market by bringing in the most money.

### Key Highlights

- The global aortic valve replacement market to grow at USD 33,516 million by 2030 at a CAGR of 14% from the early figures of USD 10723 million in 2021.
- Minimal invasive surgery is the major dominant segment in the by-surgery type segmentation that accounts for a market value of USD 5,838 million in 2021 and is expected to grow to USD 21,860 million by 2030 at a CAGR of 16%.
- The hospital segment in the by end-use category contributes the major share of the market with USD 3,953 million in 2021 and would reach USD 11,410 million by 2030 at a CAGR of 13%.

- Europe is leading the global aortic valve replacement market with a market value of USD 3,535 million in 2021 and is expected to grow to USD 9,117 million by 2030 at a CAGR of 11%.

### Competitive Analysis of the Global Aortic Valve Replacement Market

Boston Scientific Corporation  
Cryolife Inc.  
Liva Nova PLC  
Medtronic  
Abbott  
Symetis SA

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**NewYork-Presbyterian  
Komansky Children's Hospital**

## Chief of the Division of Pediatric Cardiology

Pediatric Cardiovascular Services at Weill Cornell is comprised of the combined programs of Pediatric Cardiology and Pediatric Cardiovascular Surgery. In addition, these divisions collaborate in a unique way with the pediatric heart team at Columbia University to form the Pediatric Heart Center of NYP. This combined program has specialists for every facet of acquired heart disease in children and congenital heart disease in infants, children, adolescents and adults. With this combined program, Weill Cornell pediatric cardiologists are affiliated with the congenital heart center at NYP — the highest-ranked center within the New York metropolitan area providing cardiac services for pediatric and adult patients with congenital heart disease. The bicampus NYP Pediatric Heart Program, ranked #5 in U.S. News & World Report, is one of the highest volume programs in the country and offers the full range of therapies, interventions and surgeries with a team-based, specialized approach that provides optimal care for children with heart disease and disorders.

Weill Cornell Medicine seeks a physician of unique vision, enthusiasm, and experience for this Division Chief position. The ideal candidate for the leadership role is a physician leader with experience in the application of new knowledge to the practice of clinical medicine and a track record of successful leadership in the field. They will be a nationally respected academic pediatric cardiologist. Because the next Chief will be the leader of a growing and complex clinical enterprise, experience in leading successful programs is critically important. The Chief must

exhibit the qualities required to be a successful leader in a complex, matrixed environment, including the ability to work collaboratively across the various organizations, and effectively promote the Division with community providers and leaders, donors, and hospital executives.

### Ideal Experience

- Administrative and leadership experience; business acumen
- Clinical and research program development
- Commitment to diversity, equity, inclusion, and anti-racism
- Reputation for personal academic accomplishments
- Uncommon gravitas and ability to collaborate
- Academic credentials: Board certification in Pediatric Cardiology and eligibility for licensure in the state of New York. Education and experience appropriate for appointment at the rank of Associate Professor or Professor.

Inquiries, nominations, and applications are invited and should be submitted to [wyampolsky@spencerstuart.com](mailto:wyampolsky@spencerstuart.com). Review of applications will begin immediately and will continue until the position is filled, although indication of interest is encouraged by November 15, 2022.

## Director of Pediatric Cardiac Catheterization

### Job Description

Reporting to the Chief of the Division of Pediatric Cardiology, the new Director of Pediatric Cardiac Catheterization will be responsible for the strategic direction, operation and administration of the Cardiac Catheterization Laboratory, inclusive of Diagnostic and Interventional procedures, new technologies and trials. The successful applicant will join an expanding team of academic pediatric cardiologists, with a vision to provide a full spectrum of clinical pediatric cardiology services in the near future, including multi-modal diagnostic imaging, interventional cardiology, electrophysiology, fetal cardiology, and adult congenital heart disease in conjunction with our Adult Congenital Heart Disease specialists. The Director will be expected to lead the Pediatric Cardiac Catheterization Laboratory in a manner that contributes to the successful mission of the NewYork-Presbyterian Phyllis and David Komansky Children's Hospital and WCM as well as partner with the Director of Pediatric Cardiac Catheterization Laboratory at NewYork-Presbyterian Morgan Stanley Children's Hospital. They will be committed to quality-driven care, whether it be in interventional cardiology, cardiac intensive care, non-invasive cardiology, or other cardiology treatments and investigations, to ensure the best outcomes. The Director will work in collaboration with the Department of Cardiothoracic Surgery, the Pediatric Intensive Care Unit and the Division of Pediatric Cardiology at NewYork-Presbyterian Morgan Stanley Children's Hospital / Columbia Medical Center. It is also expected that the Director of Pediatric Cardiac Catheterization will address referrals from Pediatric Cardiology services at NYP Lower Manhattan Hospital, NYP Brooklyn Methodist Hospital, and NYP Queens Hospital. The Director will maintain a close collaboration with leaders at Weill Cornell Medicine and NYP to include strategic planning and development and resource management.

### Key Responsibilities

The Director of Pediatric Cardiac Catheterization will be responsible for program development and oversight, including clinical, educational and research program activities of the Cardiac Catheterization Laboratory. Mentoring of junior faculty and fellows, support of quality improvement and safety initiatives, expansion of clinical services within the NYP network, and continued development of research related activities are notable priorities. The Director of Pediatric Cardiac Catheterization will have responsibility for:

- Providing cardiac catheterization services for patients with congenital heart disease that cover the full spectrum of interventional procedures.
- Diagnosing, treating, and providing medical services to patients.
- Clinical management & delivery of high-quality patient care consistent with the mission, vision and values of the organization.
- Leading special projects relating to growth, development, integration and improvement of interventional cardiology with Morgan Stanley Children's Hospital.
- Providing leadership and education for advanced fellowships in Interventional Cardiology.

- Providing leadership in the development of the Cardiac Catheterization Laboratory research programs.
- Serving as a key clinical leader with high visibility who communicates regularly with the physicians and clinical team.
- Overseeing Cath Lab operations and collaborate with strong Physician leadership to drive a system-oriented mindset within the Cath Lab.
- Maintaining and promoting communication among all members of interdisciplinary teams, patients, and visitors, implementing hospital policy and procedures.
- Overseeing operation and management of the assigned units, as well as ensuring highest standard of care and patient satisfaction are consistently met and upheld.
- Establishing and evaluating new and innovative procedures for patients with congenital heart disease, including procedures that are based on a close collaboration between interventional cardiologists and cardiothoracic surgeons.
- Performing therapeutic and diagnostic cardiac catheterizations along with other general clinical duties.
- Working with the lab team to provide a positive, forward-thinking work environment, maintaining and managing quality care, fostering new and ongoing research opportunities, and continued advancement in new and innovative catheter-based therapies.
- Establishment of programmatic goals, operations, and organizational development of Weill Cornell's and NYP's Pediatric Cardiac Catheterization Unit - working closely with Division Chief, Department Chair, leaders of other divisions and the executive management of both the Weill Cornell Physician Organization ("WCPO") and NYP.
- Other duties, as requested by the Division Chief.

### Application Process

To apply, please submit the following items to:

[pedsrecruitment@med.cornell.edu](mailto:pedsrecruitment@med.cornell.edu)

- A cover letter (not to exceed 2 pages)
- Your current C.V.
- 2-3 references (names with contact information)

This will be based on a rolling application process.

**If you have questions about the application process, please contact:**

Bruce Greenwald, MD, FAAP, FCCM  
Professor of Clinical Pediatrics, Weill Cornell Medicine  
Chief, Division of Pediatric Critical Care Medicine  
Executive Vice Chair for Operations, Department of Pediatrics  
Email: [bmgreen@med.cornell.edu](mailto:bmgreen@med.cornell.edu)



# American Society of Echocardiography Elects New Board President

The American Society of Echocardiography (ASE) is pleased to announce the appointment of Stephen H. Little, MD, FASE, FRCPC, FACC, as the organization's new Board of Directors President, effective July 1, 2022.

Dr. Little has a strong understanding of the needs of ASE and its diverse membership from his nearly 20-year career dedicated to clinical, educational and research activities in cardiovascular ultrasound, and the numerous leadership and volunteer positions he's held within the Society.

During the 33rd Annual Scientific Sessions in Seattle, Washington, June 10th-13th, Dr. Little shared his vision as ASE's 2022-2023 President. ASE brings together cardiovascular ultrasound imaging experts, enthusiasts and multidisciplinary partners from across the globe, and he explained that a varied and active membership not only makes ASE stronger, but also improves the field and ultimately patient care.

"ASE attracts all users of cardiovascular ultrasound and each member's professional needs and concerns may differ," said Dr. Little. "During my term as President, I want to communicate the many opportunities members have to become fully engaged based on their professional interests and areas of expertise. In the 'big tent of echo,' each ASE member should feel valued and connected to leadership and to each other."

Dr. Little also mentioned the importance of highlighting ASE's quality initiatives, and education and advocacy efforts.

"For ASE to continue to lead in this field, we must: recognize that our members are professionally diverse, identify their needs, act quickly and educate thoroughly. The current strategic goals of ASE focus our efforts where they are most needed. These include developing

strategic partnerships to support research, being indispensable in the development of new technology, meeting the educational needs of a growing variety of clinicians, and being the voice of and embracing all cardiovascular ultrasound users," he said.

Dr. Little earned his medical degree from McMaster University in Ontario, Canada, and completed two clinical and research fellowships in echocardiography at the University of Ottawa Heart Institute in Ontario and Baylor College of Medicine in Houston, Texas. He is a cardiologist at Houston Methodist Hospital and holds leadership positions as the director for the cardiology fellowship training program and is the system director for Structural Heart Disease. He is also Professor of Medicine at Weill Cornell Medical College and an Adjunct Professor at Rice University in the Department of Bioengineering. In each of these roles, he's honed his skills in effective communication, consensus building and strategic action.

Dr. Little is an active member and longtime leader in a variety of healthcare-related organizations, including ASE. He initially joined ASE as a cardiology fellow more than 20 years ago and has been a member of multiple committees—Information Technology, Research, Industry Relations and Public Relations, among others. He was also Chair and Co-Chair of both the Structural Heart Disease Task Force and the Committee on Guidelines and Standards. Most recently, he served on the Executive Committee on ASE's Board of Directors as the 2021-2022 President-Elect.

ASE membership also elected ten new Board members to serve the Society starting July 1st, 2022. The 2022 Executive Committee welcomes: newly elected Vice President Theodore Abraham, MD, FASE, University of California at San Francisco, San Francisco, CA; Council Representative Keith Collins, MS, RDCS,

FASE, Northwestern Medicine, Chicago, IL; and Secretary Kelly Thorson, DHSc, MSRS, ACS, RDCS, FASE, Lucile Packard Children's Hospital Stanford, Palo Alto, CA.

In addition to the new officers, the following new Board of Directors members were elected to serve two-year terms: Jose Banchs, MD, FASE, FACC, University of Colorado Anschutz Medical Campus, Aurora, CO (Member at Large); Akhil Narang, MD, FASE, Northwestern Medicine, Chicago, IL (Member at Large); Fadi Shamoun, MD, FASE, Mayo Clinic Arizona, Scottsdale, AZ (Council on Circulation & Vascular Ultrasound Steering Committee Chair); Neha Ringwala Soni-Patel, MD, RDCS, RDCS (AE/PE), FASE, Cleveland Clinic Children's, Cleveland, OH (Member at Large); and G. Monet Strachan, ACS, RDCS, FASE, UCSD Medical Center, San Diego, CA (Council on Cardiovascular Sonography Steering Committee Chair). Sujatha Buddhé, MD, MS, FASE, Seattle Children's Hospital, University of Washington, Seattle, WA (Leadership Academy Representative) and Arthur Labovitz, MD, FASE, Naples Cardiac & Endovascular Center (Retired), Naples, FL (Council on Critical Care Echocardiography Steering Committee Chair) will each serve a one-year term.

Learn more about ASE by visiting, [ASEcho.org](https://www.asecho.org).





THE UNIVERSITY  
of NORTH CAROLINA  
at CHAPEL HILL

# Congenital Heart Surgeon

## Primary Purpose of Organizational Unit

The UNC School of Medicine has a rich tradition of excellence and care. Our mission is to improve the health and wellbeing of North Carolinians, and others whom we serve. We accomplish this by providing leadership and excellence in the interrelated areas of patient care, education, and research. We strive to promote faculty, staff, and learner development in a diverse, respectful environment where our colleagues demonstrate professionalism, enhance learning, and create personal and professional sustainability. We optimize our partnership with the UNC Health System through close collaboration and commitment to service.

## OUR VISION

Our vision is to be the nation's leading public school of medicine. We are ranked 2nd in primary care education among all US schools of medicine and 5th among public peers in NIH research funding. Our Allied Health Department is home to five top-ranked divisions, and we are home to 18 top-ranked clinical and basic science departments in NIH research funding.

## OUR MISSION

Our mission is to improve the health and well-being of North Carolinians and others whom we serve. We accomplish this by providing leadership and excellence in the interrelated areas of patient care, education, and research.

**Patient Care:** We will promote health and provide superb clinical care while maintaining our strong tradition of reaching underserved populations and reducing health disparities across North Carolina and beyond.

**Education:** We will prepare tomorrow's health care professionals and biomedical researchers by facilitating learning within innovative curricula and team-oriented interprofessional education. We will cultivate outstanding teaching and research faculty, and we will recruit outstanding students and trainees from highly diverse backgrounds to create a socially responsible, highly skilled workforce.

**Research:** We will develop and support a rich array of outstanding health sciences research programs, centers, and resources. We will provide infrastructure and opportunities for collaboration among disciplines throughout and beyond our University to support outstanding research. We will foster programs in the areas of basic, translational, mechanistic, and population research.

## Position Summary

The Department of Surgery at The University of North Carolina is seeking applications for a full-time academic congenital heart surgeon to join our Division of Cardiothoracic Surgery. The Division of Cardiothoracic Surgery is among 9 clinical Divisions in the Department of Surgery. The Division currently includes 7 faculty members that provide exceptional care to patients from across the state of North Carolina. Academic appointment will be commensurate with the candidate's experience.

The ideal candidate will be mid to late career with a proven track record and requisite experience in all aspects of congenital cardiac surgery. The chosen candidate will be expected to work closely with the current Section Chief of Congenital Cardiac Surgery. The breadth of responsibilities will include neonatal cardiac surgery, pediatric heart failure, transplantation, ECMO, and adult congenital surgery. Preference will be given to individuals who bring unique skills, interests or qualifications to the current faculty in a complementary fashion. Individuals with a strong interest in research are encouraged to apply. Faculty members within the Division of Cardiothoracic Surgery must possess a desire to commit to all three mission of the department and school of medicine, including the clinical, education, and research missions. Regarding the education mission, faculty members are expected to regularly participate in the education of medical students, residents, and fellows. Regarding research, a commitment to any one of a broad array of research interests is desirable, including but not limited to clinical, outcomes, health services, basic science, translational, ethics, education, or global surgery research. Regarding the clinical mission, faculty members must be committed to delivering high quality clinical care that is of value to the patients of UNC. Selected candidate must be team-oriented and have the ability to interact well with colleagues inside and out of the Division.

## Minimum Education and Experience Requirements

Prospective candidates must be Board Certified/Board Eligible or Equivalent in Thoracic Surgery and in Congenital Cardiac Surgery.

## Preferred Qualifications, Competencies, and Experience

Completion of an ACGME approved Cardiothoracic Surgery Residency and Congenital Cardiac Surgery fellowship is preferred. Chosen candidate should either have a current North Carolina Medical License or be eligible for application.

Please apply online at <https://unc.peopleadmin.com/postings/234256>

*The University of North Carolina at Chapel Hill is an equal opportunity and affirmative action employer. All qualified applicants will receive consideration for employment without regard to age, color, disability, gender, gender expression, gender identity, genetic information, national origin, race, religion, sex, sexual orientation, or status as a protected veteran.*



# NOVEMBER/DECEMBER

27-01

## RSNA 2022

Chicago, IL, USA

<https://www.xpressreg.net/register/RSNA1222/attendee/landing.asp?uid=ee27a82f-1a5d-44b7-8f2b-d031a76d7e47>

# FEBRUARY

16-18

## The 7th Annual Advances in Congenital Heart Disease Summit:

Transposition of the Great Arteries: The Master Class

Orlando, FL, USA

<https://www.clevelandclinicmeded.com/live/courses/CongenitalHeart23/>

25-28

## CRT23 – Cardiovascular Research Technologies

Washington, DC, USA

<https://www.crtmeeting.org/Default.aspx>

# Publish



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CARDIOLOGY  
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- Written by fellows, doctors and their team
- Case studies, articles, research findings, reviews and human interest
- No publication fees
- Print and electronic
- Published within 3-6 months of submission
- Fellows: turn PowerPoint decks into articles

# Program Directory 2022-2023

Published Mid-August

- Directory of Congenital & Pediatric Cardiac Care Providers in North America
- Updates accepted year round, send to [Kate.f.Baldwin@gmail.com](mailto:Kate.f.Baldwin@gmail.com)
- Contact information at each hospital for Chief of Pediatric Cardiology & Fellowship Director
- Lists each hospital's Pediatric Cardiologists & Cardiothoracic Surgeons
- Lists Pediatric Cardiology Fellowships
- Distributed to Division Chiefs by mail
- Electronic version available on CCT's website homepage: [CongenitalCardiologyToday.com/Program-Directory](https://CongenitalCardiologyToday.com/Program-Directory)



UNIVERSITY OF  
ILLINOIS CHICAGO

## Asst/Assoc/Professor of Pediatric Cardiology

The **Department of Pediatrics of the University Of Illinois College Of Medicine at Peoria (UICOMP)** seeks **Pediatric Cardiac Electrophysiology** candidates for a **pediatric cardiology faculty position**.

This cardiologist will work primarily at **OSF Healthcare Children's Hospital of Illinois**. The candidate must hold an MD/DO degree, be board-certified or board-eligible in pediatric cardiology, and hold or be eligible for an Illinois physician license. Candidates must have completed residency & fellowship training. Additional training and/or extensive experience in pediatric and congenital cardiac electrophysiology, invasive and non-invasive, is required.

The candidate will join a well-established team of 10 pediatric cardiologists, 2 pediatric cardiovascular surgeons, 4 advanced practice providers, and EP nursing. Professional efforts will be bolstered by state-of-the-art facilities, including EP lab. Excellent collaboration exists among pediatric subspecialists as well as adult cardiology colleagues. UICOMP supports a thriving education program with medical students, residents, and fellows.

### Position Summary:

Clinical activities will include outpatient clinics, inpatient rotation, and procedural time. Travel to outreach clinics located in surrounding community cities is required. Inpatient and procedural care is provided at OSF Healthcare Children's Hospital of Illinois (CHOI). Clinical activities of this faculty member will be at the full time assistant/associate/professor rank based on the experience of the candidate.

### Duties & Responsibilities:

- Patient care duties including inpatient, outpatient and interventional.
- Satellite clinics in the region.
- Device checks both in person and remote.
- On-call duties for pediatric cardiology and electrophysiology.
- Teaching of medical students, residents, and fellow.
- Academic efforts including original research and QI.
- Administrative efforts related EP program.

Malpractice insurance is provided by the University of Illinois system and an excellent benefits package available including vacations, sick time, CME, health and life insurance and retirement plan.

### Minimum Qualifications:

- MD/DO or foreign equivalent.
- Eligible for licensure in Illinois.
- BC/BE in Pediatric Cardiology.
- 3 years pediatric residency/3 years pediatric cardiology fellowship or equivalent.
- Significant experience or formal training in Pediatric Cardiac Electrophysiology (invasive and non-invasive).

**For fullest consideration submit your application to:**

**<https://uic.csod.com/ux/ats/careersite/1/home/requisition/1806?c=uic>**

*The University of Illinois System is an equal opportunity employer, including but not limited to disability and/or veteran status, and complies with all applicable state and federal employment mandates. Please visit [Required Employment Notices and Posters](#) to view our non-discrimination statement and find additional information about required background checks, sexual harassment/misconduct disclosures, COVID-19 vaccination requirement, and employment eligibility review through E-Verify.*

**[Request an Accommodation](#)**



# Pediatric Interventional Cardiology Opportunity

**Children's Hospital of Michigan** is the leader in treating the most children for inpatient cardiovascular care in the Metropolitan Detroit area. With an extensive team of 20 attendings and a dedicated nursing staff, the Pediatric Cardiologists and Pediatric Cardiovascular surgeons at Children's Hospital of Michigan provide a full range of advanced cardiac services for newborns, infants, children, and adolescents with congenital or acquired heart disease.

The **Cardiology and Heart Surgery programs** at Children's Hospital of Michigan are **ranked among the U.S. News & World Report's 2021-2022 Best Children's Hospitals rankings**. Our program is also designated as one of two **UNOS certified cardiac transplant centers** in the state of Michigan.

We are actively seeking an additional experienced Pediatric Interventional Cardiologist to join our robust program.

- Full-time, employed opportunity – Available immediately
- On service 4-6 weeks per year (Cardiology service)
- Work week is comprised of 2 days in the cath lab, 1 day of clinic, and 1 administrative day; teaching required
- Shared call of 1:3 with two other Interventional Cardiologists for the cath lab rotation
- Dedicated nursing staff of five with one that is designated for cath/EP
- Academic appointment through Central Michigan University
- Affiliation with Central Michigan University, Michigan State University, and Wayne State University School of Medicine for collaboration in teaching and research
- Additionally, we have a tremendous research opportunity to work on cardiovascular interventional research for CCISC, a non-profit organization dedicated to the advancement of the science and treatment of infants, children, and adults requiring surgical/interventional procedures for the treatment of congenital heart disease.

## Candidate Requirements:

- MD or DO degree required
- Board certification required
- 1-2 years of advanced fellowship in Cardiac Cath Intervention preferred
- 3-5 years of experience required
- Ability to obtain licensure in the State of Michigan
- An interest in teaching and research highly preferred as resident/fellow teaching is to be expected
- Please note: Unfortunately, we are unable to sponsor J1 waivers at this time. H1b visas are considered on an individual basis.

## How to Apply:

Interested candidates should submit a CV for immediate consideration.

**Chris Belton**  
**Physician Sourcing Specialist, Tenet Health Corporation**  
**469.893.6577**  
[Chris.Belton@tenethealth.com](mailto:Chris.Belton@tenethealth.com)



## **CORPORATE TEAM**

**PUBLISHER &  
EDITOR-IN-CHIEF**

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*kate.f.baldwin@gmail.com*

**CO-FOUNDER &  
MEDICAL EDITOR**

John W. Moore, MD, MPH  
*jwmmoore1950@gmail.com*

**FOUNDER &  
SENIOR EDITOR**

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*tcarlsonmd@gmail.com*

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