PEDIATRIC CARDIOLOGY FELLOWSHIP TRAINING PROGRAM

DESCRIPTION

Pediatric Cardiology
NYU Fink Children’s Ambulatory Care Center
160 East 32nd Street
New York, NY 10016
Phone: 212-263-9990; Fax: 212-263-3995
Program Director: Gillian Henry, MBBS
Gillian.Henry@nyumc.org

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WELCOME!

Welcome to NYU, and thank you for your interest in our program.

Our tradition of excellence continues today with the growth and development of a world-class academic pediatric and congenital heart center. Here you will find all the hallmarks of a large,
comprehensive training program. We see an unusually broad clinical spectrum in a medium-size pediatric cardiac surgical program. We have committed, award-winning educators. We have an array of scholarly opportunities not only within our Division, but also spanning across all of New York University. And yet, we are small enough to be a tight-knit group, where our trainees are never “lost in the crowd” and where one-on-one learning with a mentor is still the norm. We believe, therefore, that we have the very best characteristics of both large and small programs.

We appreciate your taking this opportunity to learn more about us as we learn about you. We wish you the very best for your future career.

Gillian Henry, MBBS
Fellowship Program Director

Achi Ludomirsky, MD
Director, Pediatric Cardiology

PEDIATRIC CARDIOLOGY FACULTY
The Pediatric Cardiology faculty at NYU School of Medicine is a distinguished group of individuals who hail from all over the country and the world. Widely recognized for their excellence and commitment, they are passionate about patient care, scholarship, and teaching. They are frequent invited lecturers at scientific conferences and academic medical centers. Our faculty members have won awards at the local and national levels, for patient care (“Best” lists), research, and teaching. Having trained and worked at some of the finest institutions anywhere, the NYU faculty ensure a breadth and depth of experience that create an outstanding training environment.

Achiu Ludomirsky, MD
Chief, Division of Pediatric Cardiology

Doff McElhinney, MD
Associate Chief, Division of Pediatric Cardiology

Michael Argilla, MD
Director, Pediatric & Congenital Interventional Cardiology

Frank Cecchin, MD
Director, Pediatric Electrophysiology

Sujata Chakravarti, MD
Director, Pediatric Cardiac Critical Care

Gillian Henry, MBBS
Director, Pediatric Cardiology Fellowship Training

Colin Phoon, MPhil, MD
Director, Pediatric & Fetal Echocardiography

Ralph Mosca, MD
Chief, Division of Pediatric & Adult Congenital Cardiac Surgery

Puneet Bhatla, MBBS, MD
Attending Pediatric Cardiologist & Advanced Congenital Cardiac Imaging

Melissa Busovskv-McNeal, MD
Attending Pediatric & Congenital Interventional Cardiology

Anne Chun, MD
Associate Director, Pediatric & Fetal Echocardiography

William Coetsee, DSc
Vice-Chair for Research, Pediatrics

Alan Langsner, MD
Attending Pediatric Cardiologist

Sharda McGuire, MSN, FNP
Pediatric Cardiology & Electrophysiology Services

Daniela Rafii, MD
Attending Pediatric Cardiologist

Rebecca Rapoport, PNP
Pediatric Cardiology Outpatient Services
FACULTY PROFILES

**Achiau Ludomirsky, MD**  
*Andrall E. Pearson Professor of Pediatric Cardiology*  
*Professor of Pediatrics*  
*Director, Pediatric Cardiology*  
E-mail: Achi.Ludomirsky@nyumc.org

Medical Education: Sackler School of Medicine, Tel Aviv University  
Residency Training: Hadassah Hebrew University Hospital  
Fellowship Training: Baylor College of Medicine,  
Texas Children’s Hospital (Pediatric Cardiology)

*Clinical and Research Interests:*
- Congenital heart disease
- New imaging modalities for the diagnosis and management of congenital heart disease
- Therapeutic (high-intensity focused) ultrasound for the treatment of congenital heart disease
- Strain and strain rates measured by non-invasive modalities to evaluate ventricular function

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**Michael Argilla, MD**  
*Assistant Professor of Pediatrics*  
*Director, Pediatric & Congenital Interventional Cardiology*  
E-mail: Michael.Argilla@nyumc.org

Medical Education: University of Colorado School of Medicine  
Residency Training: NYU Medical Center (Pediatrics)  
Fellowship Training: NYU Medical Center (Pediatric Cardiology),  
UCSF Medical Center (Interventional Pediatric Cardiology)

*Clinical and Research Interests:*
- Pediatric and congenital interventional catheterization

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**Puneet Bhatla, MBBS, MD**  
*Assistant Professor of Pediatrics*  
E-mail: Puneet.Bhatla@nyumc.org

Medical Education: University of Rajasthan, India  
Residency Training: Maimonides Medical Center (Pediatrics)  
Fellowship Training: Mount Sinai Medical Center (Pediatric Cardiology)  
Advanced Fellowship: Mount Sinai Medical Center (Non-Invasive Imaging)

*Clinical and Research Interests:*
- Non-invasive imaging: Cardiac MR, fetal and pediatric echocardiography
- Normative data for quantification of chamber size
- Segmental approach to congenital heart disease
- Cardiac intensive care of congenital heart disease patients
Melissa Busovsky-McNeal, MD
Instructor in Pediatrics
Attending, Pediatric & Congenital Interventional Cardiology
E-mail: Melissa.Busovsky-McNeal@nyumc.org
Medical Education: Indiana University School of Medicine
Residency Training: Indiana University School of Medicine,
Riley Hospital for Children (Pediatrics)
Fellowship Training: Yale-New Haven Hospital (Pediatric Cardiology),
Columbia University Medical Center, New York Presbyterian Hospital
(Interventional Pediatric Cardiology)
Clinical and Research Interests:
- Pediatric and congenital interventional catheterization
- Pediatric cardiac critical care
- Aviation medicine

Frank Cecchin, MD
Professor of Pediatrics and Medicine
Director, Pediatric Electrophysiology
E-mail: Frank.Cecchin@nyumc.org
Medical Education: East Carolina University, Brody School of Medicine
Residency Training: Texas Children’s Hospital, Baylor College of Medicine (Pediatrics)
Fellowship Training: Texas Children’s Hospital, Baylor College of Medicine (Pediatric Cardiology)
Advanced Fellowship: Texas Children’s Hospital, Baylor College of Medicine (Pediatric Electrophysiology)
Clinical and Research Interests:
- Pediatric arrhythmias and electrophysiology
- Radiofrequency ablation of arrhythmias associated with congenital heart defects
- Innovative approaches to catheter ablation and device implantations

Sujata Chakravarti, MD
Assistant Professor of Pediatrics
Director, Pediatric Cardiac Critical Care
E-mail: Sujata.Chakravarti@nyumc.org
Medical Education: University of Rochester School of Medicine and Dentistry
Residency Training: Montefiore Medical Center, Albert Einstein College of Medicine
Fellowship Training: Mount Sinai Medical Center (Pediatric Cardiology)
Advanced Fellowship: Children’s Hospital Boston (Cardiac Critical Care)
Clinical and Research Interests:
- Pediatric cardiac critical care
- Quality improvement (QI) initiatives in pediatric cardiac critical care
Anne Chun, MD  
Assistant Professor of Pediatrics  
Associate Director, Pediatric & Fetal Echocardiography Laboratory  
E-mail: Anne.Chun@nyumc.org  
Medical Education: University of Connecticut School of Medicine  
Residency Training: University of Chicago Hospitals (Pediatrics)  
Fellowship Training: Columbia University Medical Center, New York Presbyterian Hospital (Pediatric Cardiology)  
Clinical and Research Interests:  
• Non-invasive imaging: fetal and pediatric echocardiography  
• Pulmonary hypertension  
• Obesity

William Coetzee, DSc  
Professor of Pediatrics, Pharmacology, and Physiology & Neuroscience  
Vice-Chair for Research (Pediatrics)  
Director of Research in Pediatric Cardiology  
E-mail: William.Coetzee@nyumc.org  
Postdoctoral Training:  
• Research Assistant, Department of Physiology, University of Potchefstroom  
• Research Fellow, Department of Physiology, University of Leuven  
• Research Officer, Ischemic Heart Disease Research Unit of South African Medical Research Council, University of Cape Town  
• Senior Research Officer, Ischemic Heart Disease Research Unit of South African Medical Research Council, University of Cape Town  
• Research Fellow and Honorary Lecturer, Department of Biochemistry, United Medical and Dental Schools of Guy’s and St. Thomas’ Hospitals  
Research Interests:  
• Electrophysiology and molecular biology of cardiovascular membrane ion transport proteins

Gillian Henry, MBBS  
Assistant Professor of Pediatrics  
Director, Fellowship Training, Pediatric Cardiology  
E-mail: Gillian.Henry@nyumc.org  
Medical Education: University of the West Indies  
Residency Training: The Brooklyn Hospital Center (Pediatrics)  
Fellowship Training: NYU Medical Center (Pediatric Cardiology)  
Clinical and Research Interests:  
• Non-invasive imaging: fetal and pediatric echocardiography  
• Brain anomalies in the fetus with congenital heart disease  
• Development of Pediatric Cardiology services in the Caribbean  
• Medical education
• Medical informatics

**Alan Langsner, MD**  
*Assistant Professor of Pediatrics*  
E-mail: Alan.Langsner@nyumc.org

Medical Education: Universidad Autonoma De Guadalajara  
Residency Training: New York Medical College (Pediatrics),  
Fellowship Training: NYU Medical Center (Pediatric Cardiology)

**Clinical and Research Interests:**  
• Congenital heart defects  
• Adult congenital heart disease  
• Medical education

**Doff McElhinney, MD**  
*Professor of Pediatrics, Medicine, and Cardiothoracic Surgery*  
*Associate Chief, Division of Pediatric Cardiology*  
E-mail: Doff.McElhinney@nyumc.org

Medical Education: University of California, San Francisco  
Residency Training: Children’s Hospital of Philadelphia  
Fellowship Training: Children’s Hospital Boston (Pediatric Cardiology)  
Advanced Fellowship: Children’s Hospital Boston (Interventional Pediatric Cardiology)

**Clinical and Research Interests:**  
• Pediatric & adult congenital interventional cardiology  
• Percutaneous cardiac valve replacement

**Sharda McGuire, MSN, FNP**  
*Family Nurse Practitioner*  
E-mail: Sharda.McGuire@nyumc.org

Nursing Education: City College of New York (BSN)  
Hunter College, New York (MSN)  
Pace University, New York (FNP)

**Clinical and Research Interests:**  
• Cardiac electrophysiology, implanted devices  
• Outpatient management of children and adults with congenital heart disease  
• Management of heart failure  
• Pediatric obesity

**Colin Phoon, MPhil, MD**  
*Associate Professor of Pediatrics*  
*Director, Pediatric & Fetal Echocardiography Laboratory*  
E-mail: Colin.Phoon@nyumc.org

Medical Education: University of Pennsylvania School of Medicine
Graduate Education: University of Cambridge (Pharmacology)
Residency Training: Johns Hopkins Hospital (Pediatrics)
Fellowship Training: UCSF Medical Center and Cardiovascular Research Institute (CVRI) (Pediatric Cardiology)

Clinical and Research Interests:
• Non-invasive imaging: fetal and pediatric echocardiography
• Mitochondrial biology in heart development; Barth syndrome
• Cardiovascular physiology and morphology in the developing heart
• History of medicine, history of cardiology

Daniela Rafii, MD
Instructor in Pediatrics
E-mail: DRafii@maimonidesmed.org
Medical Education: Weill Cornell Medical College
Residency Training: New York Presbyterian – Weill Cornell Medical Center (Pediatrics)
Fellowship Training: Columbia University Medical Center, New York Presbyterian Hospital (Pediatric Cardiology)
Advanced Fellowship: Columbia University Medical Center, New York Presbyterian Hospital (Pediatric/Fetal Echocardiography)

Clinical and Research Interests:
• Non-invasive imaging: fetal and pediatric echocardiography

Rebecca Rapoport, MSN, PNP
Pediatric Nurse Practitioner
E-mail: Rebecca.Rapoport@nyumc.org
Nursing Education: Georgetown University (BSN)
New York University (MSN)
New York University (Advanced Practice Nursing, PNP)

Clinical and Research Interests:
• Outpatient management of children and young adults with congenital heart disease
• Adolescent health care
BRIEF PROGRAM DESCRIPTION

**Pediatric Cardiology** is a comprehensive and dynamic program within the Department of Pediatrics at New York University School of Medicine and NYU Langone Medical Center. One of the nation’s leading academic medical centers, NYU Langone Medical Center carries a long and distinguished history of pediatric care, including pediatric cardiology care. Dr. Janet Baldwin, one the Division’s first Directors, introduced pediatric cardiac catheterization to the New York City region. Dr. Eugenie Doyle, who directed the Division over a 4-decade period, made important observations on rheumatic fever and contributed to enormous advances in the medical and post-surgical care of young patients as effective surgery for congenital heart defects was being developed. Dr. Doyle worked closely with the prominent NYU cardiothoracic surgeon Dr. Frank Spencer, who trained under Dr. Alfred Blalock, developer of the “blue baby operation” that bears his name. Dr. Michael Artman later expanded the scientific and clinical programs, while Dr. Stephen Colvin pioneered techniques in mitral valve and congenital heart repair as well as minimally-invasive surgical approaches. Dr. Achi Ludomirsky, widely recognized for his contributions to pediatric heart imaging, was recruited in 2007 as the current Director of Pediatric Cardiology. Internationally recognized as an accomplished congenital heart surgeon, Dr. Ralph Mosca joined the Department of Cardiothoracic Surgery in 2009 as the Division Chief for **Pediatric and Adult Congenital Cardiac Surgery**.

The Division of Pediatric Cardiology and Dr. Mosca are working closely together to build a world-class pediatric and adult congenital heart disease center at NYU. Since his recruitment in 2009, Dr. Mosca has performed all manner of corrective and palliative cardiac surgery, from complex neonatal operations to challenging adult congenital cases. Performing over 200 operations yearly now, Dr. Mosca enjoys one of New York State’s lowest surgical mortality rates. NYU Langone Medical Center participates in the Gift of Life Program and in the Kids World Wide Program, which provide cardiac diagnostic and surgical care to children from overseas. Dr. Sunil Malhotra joined Dr. Mosca in 2010 as Assistant Professor in the Division of Pediatric and Adult Congenital Cardiac Surgery. His clinical interests include neonatal cardiac surgery and the surgical management of complex congenital cardiac defects. He serves as site director of the pediatric cardiac surgery program at the Children’s Hospital of New Jersey at the Newark Beth Israel Medical Center. The cardiothoracic surgery, pediatric cardiology, and pediatric critical care teams collaborate closely on the care of our post-operative patients.

Outpatients are seen in the NYU Faculty Practice offices and in a large general Pediatric Cardiology Clinic that is held weekly at Bellevue Hospital Center. Outpatient visits average about 6000 per year. Recently, Dr. Catherine Weinberg was recruited to the Division of Cardiology (Department of Medicine) to bolster expertise in adult congenital cardiac care. The Pediatric & Fetal Echocardiography Laboratory provides cardiac ultrasound imaging for inpatients and outpatients at both NYU Langone Medical Center and Bellevue Hospital. The laboratory performs over 5500 studies each year, including over 1000 fetal and 200 transesophageal studies. We collaborate closely with the Department of Radiology and the Adult Echocardiography Lab. The MRI/MRA and cardiac CT suites provide state-of-the-art facilities for cardiac imaging and analysis, including 3-dimensional reconstruction. Stress treadmill exercise testing and stress echocardiography testing are routinely performed by Pediatric Cardiology faculty as indicated. The NYU Cardiopulmonary Exercise Laboratory provides additional comprehensive and sophisticated analysis of cardiac and respiratory responses to exercise. The Pediatric Cardiac Catheterization Laboratory performs 180 to 200 procedures per
year and provides diagnostic, interventional and electrophysiology services to children and adolescents, as well as adults with congenital heart disease.

The ACGME–accredited three-year fellowship training program currently has 5 fellows. Fellows, residents, and medical students are taught at NYU Langone Medical Center’s Tisch Hospital. Bellevue Hospital Center, the “crown jewel” of the NYC public hospital system and the oldest public hospital in the US, serves as the major affiliate clinical and training site. The diversity of our clinical caseload is reflected in New York City’s population, and immigrants who have not received optimal care in their homelands provide challenging clinical problems rarely seen elsewhere in the US. Our clinical program is supported by dedicated specialists in other Departments/Divisions, including Cardiology (Cardiovascular Genetics and Adult Congenital Heart Disease), Radiology (Cardiac and Pediatric Radiology), and Pediatric Critical Care. NYU’s dedicated Congenital Cardiovascular Care Unit (CCVCU), one of the few of its kind in the nation, provides further focus and training on the pre- and post-operative management of the sick cardiac patient. Formal affiliations with major New York metro area hospitals, including Maimonides Medical Center and the Children’s Hospital of New Jersey, ensure the scope, breadth, and growth of our program.

The training program emphasizes knowledge and skills necessary for general pediatric cardiology clinical practice or further training in a pediatric cardiology subspecialty. In addition to a diverse patient population, numerous opportunities for didactic learning abound. Unparalleled opportunities for clinical, basic science, and epidemiological research span across departments and schools within New York University, the largest private university in the country. There are also opportunities to pursue courses in higher education offered by NYU, such as Masters degree programs in public health and clinical investigation, and courses in medical statistics. Our fellows also learn how to teach, and teach well they do: two in the past 3 years have garnered the Fellow of the Year, Award of Excellence in Teaching from the Pediatrics housestaff. We are justifiably proud of our graduates, who have placed well throughout the country in clinical practice, further subspecialty training positions, and in full-time faculty positions.

**SELECTION**

Fellows are selected to the program on the basis of past academic performance and potential for success in the field of pediatric cardiology. Prior clinical, teaching, research and administrative interests and experience are reviewed in conjunction with letters of recommendation by their residency program director and faculty mentors. An interview with the Program Director, attending staff and current fellows is arranged for qualified applicants. This provides the applicant with an opportunity to view our clinical facilities, ask questions about our educational opportunities and philosophies, and express their goals and objectives for the training period and their careers. The program adheres to the Equal Opportunity Employer (EOE) / Affirmative Action (AA) policy of the NYU Langone Medical Center.

Applicants are accepted through the National Residency Matching Program and must apply directly to the NRMP to participate ([www.nrmp.org](http://www.nrmp.org)). Accepted applicants must adhere to the policies and procedures of the Match and are notified directly by the NRMP and the Program Director. All candidates must have successfully completed a residency in an ACGME-accredited Pediatrics or Med-Peds residency program and must be eligible to obtain an unrestricted New York State medical license prior to the start of their training period.
<table>
<thead>
<tr>
<th>Conference</th>
<th>Frequency</th>
<th>Person(s) responsible for conducting conference</th>
<th>Venue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pediatric Cardiology Fellows Core Lecture Series</td>
<td>3 / month</td>
<td>Pediatric Cardiology Attending Pediatric Cardiology Fellow</td>
<td>NYU</td>
</tr>
<tr>
<td>Pediatric Cardiac Catheterization – Surgery Conference</td>
<td>1 / week</td>
<td>Pediatric Cardiology &amp; Cardiac Surgery Attendings Pediatric Cardiology Fellow</td>
<td>NYU</td>
</tr>
<tr>
<td>Echocardiography Conference</td>
<td>1 / week</td>
<td>Pediatric Cardiology Attending Pediatric Cardiology Fellow</td>
<td>NYU</td>
</tr>
<tr>
<td>Case Management Conference</td>
<td>1 / week</td>
<td>Pediatric Cardiology Attending Pediatric Cardiology Fellow</td>
<td>NYU</td>
</tr>
<tr>
<td>Bellevue Pediatric Cardiology Post-Clinic Conference</td>
<td>1 / week</td>
<td>Pediatric Cardiology Attending Pediatric Cardiology Fellow</td>
<td>BHC</td>
</tr>
<tr>
<td>Electrophysiology Conference</td>
<td>1 / week</td>
<td>Pediatric Cardiology Attending Pediatric EP Nurse Practitioner</td>
<td>NYU</td>
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<tr>
<td>New York Pediatric Echo Society</td>
<td>4 / year</td>
<td>Pediatric Cardiology Attendings &amp; Fellows Pediatric Cardiac Sonographers</td>
<td>Rotating, NY City Hospitals</td>
</tr>
<tr>
<td>Dept. of Pediatrics Grand Rounds</td>
<td>1 / week</td>
<td>Pediatrics Attendings Pediatrics Chief Residents Visiting Professors</td>
<td>NYU</td>
</tr>
<tr>
<td>Adult Cardiology Grand Rounds</td>
<td>1 / week (as relevant)</td>
<td>Adult Cardiology Attendings Visiting Professors</td>
<td>NYU</td>
</tr>
<tr>
<td>Dept. of Pediatrics M&amp;M</td>
<td>QO week</td>
<td>Pediatrics Chief Residents Pediatrics Attendings</td>
<td>NYU</td>
</tr>
<tr>
<td>Basic Science Rotation: Work-in-Progress talks</td>
<td>~Q3months</td>
<td>Pediatric Cardiology Fellow</td>
<td>NYU</td>
</tr>
<tr>
<td>Basic Science Rotation: Journal Club</td>
<td>As scheduled</td>
<td>Pediatric Cardiology Fellow Lab Personnel Basic Science faculty</td>
<td>NYU</td>
</tr>
<tr>
<td>Center for Translational Science Institute (CTSI)</td>
<td>As scheduled</td>
<td>CTSI personnel NYU Clinical &amp; Basic Science faculty</td>
<td>NYU</td>
</tr>
<tr>
<td>Biostatistics &amp; Research Design</td>
<td>As scheduled</td>
<td>Pediatrics Attendings</td>
<td>BHC</td>
</tr>
</tbody>
</table>
# OVERALL PROGRAM GOALS AND OBJECTIVES

<table>
<thead>
<tr>
<th>Clinical Curriculum</th>
<th>Competency</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goal</strong></td>
<td>To develop evidence based approach to the care of pediatric patients with acute and chronic, congenital and acquired cardiology ailments. <strong>Inpatient and outpatient experiences.</strong></td>
</tr>
<tr>
<td><strong>Objectives</strong></td>
<td></td>
</tr>
<tr>
<td>1. The overall goal is for the trainee to become proficient, effective, compassionate and professional in the delivery of comprehensive care for fetuses, premature and term infants, children, adolescents and young adults with congenital and acquired cardiovascular diseases both in outpatient and inpatient environments.</td>
<td></td>
</tr>
<tr>
<td>2. Describe the pathophysiology of disease</td>
<td>K</td>
</tr>
<tr>
<td>3. Describe the epidemiology of disease</td>
<td>K</td>
</tr>
<tr>
<td>4. Perform a directed history and examination</td>
<td>K, PC</td>
</tr>
<tr>
<td>5. Select and interpret appropriate laboratory tests</td>
<td>K, PC, PBL</td>
</tr>
<tr>
<td>6. Select and interpret appropriate radiological tests</td>
<td>K, PC, PBL</td>
</tr>
<tr>
<td>7. Understanding and application of pharmacologic principles as they pertain to the pediatric cardiology patient.</td>
<td>K, PC</td>
</tr>
<tr>
<td>8. Basic application of assist ventilation and cardiopulmonary interactions.</td>
<td>K, PC</td>
</tr>
<tr>
<td>9. Principles and application of pain control, conscious and deep sedation</td>
<td>K, PC</td>
</tr>
<tr>
<td>10. Arrive at presumptive and alternative diagnosis</td>
<td>K, PC, PBL</td>
</tr>
<tr>
<td>11. Participate and eventually effectively conduct bedside working and teaching rounds as well as outpatient encounters.</td>
<td>K, PC, P, PBL, SBP</td>
</tr>
<tr>
<td>12. Generate an initial and daily care plan.</td>
<td>K, PC, PBL, SBP</td>
</tr>
<tr>
<td>13. Generate appropriate patient progress notes and consultations.</td>
<td>K, PC, ISC, PBL, P</td>
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<tr>
<td>14.</td>
<td>Resource utilization: appropriate use of consultants</td>
</tr>
<tr>
<td>15.</td>
<td>Describe appropriate disposition and referral</td>
</tr>
<tr>
<td>16.</td>
<td>Resource utilization: Use appropriate monitoring techniques</td>
</tr>
<tr>
<td>17.</td>
<td>Utilize information resources to evaluate and improve care.</td>
</tr>
<tr>
<td>18.</td>
<td>Conduct oneself in a respectful, professional, ethical manner</td>
</tr>
<tr>
<td>19.</td>
<td>Demonstrate recognition of limits, continuous self assessment</td>
</tr>
<tr>
<td>20.</td>
<td>Participate in the detection and critical evaluation of medical errors</td>
</tr>
<tr>
<td>21.</td>
<td>Advocate for patients experiencing difficulties with the health care system</td>
</tr>
</tbody>
</table>

**Goal**

Develop competency in **cardiopulmonary resuscitation**

**Objectives**

1. Recognize and manage airway compromise | K, PC |
2. Recognize and manage respiratory distress and failure | K, PC |
3. Recognize and manage shock | K, PC |
4. Initial evaluation, monitoring, stabilization and transport of critically ill neonates and pediatric patients with life threatening cardiac conditions | K, PC, ISC, SBP, P |

**Goal**

Develop competency in **Pediatric Echocardiography**

**Objectives**

1. Describe indications and contraindications | K, PC |
2. Become technically confident and capable in the performance of all type of echocardiographic modalities | K |
<table>
<thead>
<tr>
<th>Goal</th>
<th>Develop competency in Pediatric Cardiac Catheterization and Invasive Electrophysiology</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Describe indications and contraindications                                      K, PC</td>
</tr>
<tr>
<td>2.</td>
<td>Describe equipment and monitoring needs                                         K, PC</td>
</tr>
<tr>
<td>3.</td>
<td>Become technically confident and capable in the performance of diagnostic studies as well as simple interventions (i.e. balloon atrial septostomy, temporary pacing)</td>
</tr>
<tr>
<td>4.</td>
<td>Obtain informed consent                                                          K, PC, P, ISK</td>
</tr>
<tr>
<td>5.</td>
<td>Describe approach and technique                                                  K, PC</td>
</tr>
<tr>
<td>6.</td>
<td>Recognize and manage complications                                               K, PC</td>
</tr>
<tr>
<td>7.</td>
<td>Basic principles of conscious and deep sedation                                  K, PC</td>
</tr>
<tr>
<td>8.</td>
<td>Pacing protocols and how they are used to show AV and VA conduction as well as refractory periods</td>
</tr>
<tr>
<td>9.</td>
<td>Basic principles of cardiac hemodynamics and angiography                         K, PC</td>
</tr>
<tr>
<td>10.</td>
<td>Generate a comprehensive and clear report stating pertinent findings, implications and suggestive plan of action (i.e. surgical intervention, observation, clinical management)</td>
</tr>
</tbody>
</table>

Learn the skills necessary to prioritize and manage
<table>
<thead>
<tr>
<th>Goal</th>
<th>the care of multiple patients</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Objectives</strong></td>
<td>1. Demonstrate the ability to prioritize the simultaneous care of multiple patients</td>
</tr>
<tr>
<td></td>
<td>2. Interact with patients and families in an ethical, professional manner which takes into the accounts the stresses associated with acute illness, injury and death</td>
</tr>
<tr>
<td></td>
<td>3. Communicate and collaborate effectively as part of a health care team</td>
</tr>
<tr>
<td></td>
<td>4. Describe key aspects of the health care system that impact patient care</td>
</tr>
<tr>
<td></td>
<td>5. Maintain comprehensive medical records</td>
</tr>
</tbody>
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<tr>
<th>Goal</th>
<th>To develop evidence based, multidisciplinary and multi focus approach; as well as knowledge, skills and principles that concern the practice of <em>pediatric cardiac critical care.</em></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Objectives</strong></td>
<td>1. The overall goal is for the trainee to become proficient, effective, compassionate and professional in the delivery of comprehensive intensive care term infants, children, adolescents and young adults in need of critical care monitoring and therapy.</td>
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<td></td>
<td>2. Describe the pathophysiology of disease</td>
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<td>3. Describe the epidemiology of disease</td>
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<td>4. Perform a directed history and examination</td>
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<td></td>
<td>5. Select and interpret appropriate laboratory tests</td>
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<td></td>
<td>6. Select and interpret appropriate radiological tests</td>
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<td></td>
<td>7. Understanding and application of pharmacologic principles as they pertain to the pediatric patient.</td>
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<tr>
<td></td>
<td>8. Basic application of assist ventilation and cardiopulmonary interactions.</td>
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<td></td>
<td>8. Basic principles of hemodynamic and cardiac</td>
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<td>9.</td>
<td>Basic principles of renal physiology and renal replacement therapy.</td>
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<td>10.</td>
<td>Basic principles of fluid management of patients with dehydration, shock, head trauma, post surgical fluid replacement</td>
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<td>11.</td>
<td>Principles of parenteral and enteral nutrition in the critically ill patient</td>
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<td>12.</td>
<td>Principles and application of pain control, conscious and deep sedation</td>
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<td>13.</td>
<td>Arrive at presumptive and alternative diagnosis</td>
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<td>14.</td>
<td>Participate and eventually effectively conduct bedside working and teaching rounds.</td>
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<td>15.</td>
<td>Generate an initial and daily care plan.</td>
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<td>16.</td>
<td>Generate appropriate patient progress notes and consultations.</td>
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<td>17.</td>
<td>Resource utilization: appropriate use of consultants</td>
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<td>18.</td>
<td>Describe appropriate disposition and referral</td>
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<td>19.</td>
<td>Resource utilization: Use appropriate monitoring techniques</td>
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<td>20.</td>
<td>Utilize information resources to evaluate and improve care.</td>
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<td>21.</td>
<td>Conduct oneself in a respectful, professional, ethical manner</td>
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<td>22.</td>
<td>Demonstrate recognition of limits, continuous self assessment</td>
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<tr>
<td>23.</td>
<td>Participate in the detection and critical evaluation of medical errors</td>
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<td>24.</td>
<td>Advocate for patients experiencing difficulties with the health care system</td>
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<td>25.</td>
<td>Maintain comprehensive medical records</td>
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<tr>
<td>Scholarly Activity</td>
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<tr>
<td><strong>Goal</strong></td>
<td>The goal of the scholarly activity curriculum for pediatric cardiology fellows is to provide broad experience in the conduct of investigation, research and teaching. The intention is to foster a keen interest in academic medicine.</td>
</tr>
<tr>
<td><strong>Objectives</strong></td>
<td>Thorough understanding of the literature as it relates to the assigned project. K, PBL</td>
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<tr>
<td></td>
<td>Knowledge and understanding of general investigational and experimental techniques. K, PBL</td>
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<td>Development of specific writing skills required for:</td>
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<td></td>
<td>- Project description</td>
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<td>- Preparation of a research proposal for a grant application</td>
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<tr>
<td></td>
<td>- Preparation of a research manuscript</td>
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<td>Development of specific verbal skills required for:</td>
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<td>- Progress reports</td>
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<td>- Formal research seminars</td>
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<td>Computer analysis of results, using the appropriate available software and produce graphical presentations and final reports of experiments. PBL, ICS</td>
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<td>To stay abreast of the current literature. K</td>
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<td></td>
<td>Where practical, the fellow will be encouraged to submit manuscripts for publication in research journals and research proposals to funding agencies. ICS, PBL, K</td>
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<tr>
<td><strong>Goal</strong></td>
<td>To facilitate the learning of medical students, residents, nurses and consultants in the clinical environment that fosters an understanding of the particular concerns of pediatric cardiology patients.</td>
</tr>
<tr>
<td><strong>Objectives</strong></td>
<td>1. To provide one on one education and consultation in the care of an individual patient PC, PBL, P</td>
</tr>
<tr>
<td></td>
<td>2. To actively participate in teaching rounds with up-to-date patient information and critical review of PC, PBL, ISC, K, P</td>
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</table>
the literature as it pertains to the particulars of the patient’s conditions and daily decisions centered in patient management.

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<tr>
<th>2. Provide feedback to learners</th>
<th>ISC, P</th>
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</table>

K - Knowledge,
PC - Patient Care
P - Professionalism
PBL - Practice Based Learning and Improvement
ISC - Interpersonal Skills and Communication
SBP - Systems Based Practice

The program is designed to:

- Facilitate acquisition of knowledge and technical expertise in the care of children with cardiovascular disease.
- Provide the academic tools to enable trainees to make meaningful scholarly contributions to the field of pediatric cardiology
- Develop the capacity for on-going continuous education and self-improvement beyond the period of formal training.
A Decade of Discovery:
Selected Publications by NYU Pediatric Cardiology Faculty (this list is not exhaustive)


Ascunce RR, Nayar AC, **Phoon CKL,** Srichai MB. Cardiac magnetic resonance findings in a case of carnitine deficiency. Tex Heart Inst J. 2013;40(1):104-5.


Benamer N, Vasquez C, Mahoney VM, Steinhardt MJ, **Coetzee WA,** Morley GE. Fibroblast KATP currents


Nakamura TY, Coetzee WA. Functional and pharmacological characterization of a Shal-related K+ channel subunit in Zebrafish. BMC Physiol. 2008 Feb 8;8:2.


