



# Pediatric Cardiology Fellowship Program

The Children's Healthcare of Atlanta Sibley Heart Center, in conjunction with the Department of Pediatrics at Emory University School of Medicine and the Todd Franklin Cardiac Research Laboratory, is committed to training future pediatric cardiologists through our Fellowship program at Children's at Egleston.

The program, which has a fellowship society that offers financial support, provides a continuum of learning that occurs within a highly developed matrix of subspecialty expertise and clinical exposure. Fellows develop decision-making skills by integrating experience, by participating in the performance and interpretation of invasive and noninvasive diagnostic testing, and by being the primary caretaker while rotating through the cardiology clinical services.

Primary cardiac teaching occurs at Children's at Egleston (255 beds) and includes the following areas:

- Cardiac Step-down Unit (CSU), 27 beds
- Cardiac Intensive Care Unit (CICU), 27 beds
- Pediatric Intensive Care Unit (PICU), 30 beds
- Neonatal Intensive Care Unit (NICU), 37 beds

Fellows at the Children's Sibley Heart Center are exposed to a large and diverse patient population with congenital and acquired pediatric heart defects. The Cardiology Fellowship program was accredited, without citations, by the Accreditation Council for Graduate Medical Education (ACGME) in 2003. The program is maintained by a medical director and by committees of pediatric and cardiac faculty.

## The Team

The cardiology team consists of 34 pediatric cardiologists who provide services in 18 outpatient locations and 40 hospitals throughout Georgia. The continuum of care and learning begins prenatally with our Fetal Cardiology program and continues to adulthood with the Adult Congenital Heart Disease Clinic in conjunction with Emory University School of Medicine.

The Children's Sibley Heart Center team offers comprehensive services for complex congenital and acquired heart disease, including cardiothoracic surgery, transplantation, interventional and diagnostic catheterization, electrophysiology and extensive noninvasive diagnostic testing. Treating more than 35,000 patients each year, the Children's Sibley Heart Center team has garnered widespread national recognition for our innovative treatments, leading-edge research and compassionate care. The Children's Sibley Heart Center was named one of the country's top three pediatric cardiac programs by *Child* magazine in 2007.

## Curriculum

Our cardiology fellows rotate through all disciplines of pediatric cardiology, including catheterization, echocardiography, electrophysiology, clinical ward and intensive care cardiology, and weekly outpatient continuity clinic. The fellowship program training is 36 months and is divided into 39, four-week rotations, 13 of these are devoted to research.

## Curriculum Schedule

Four-week rotations	PGY-4	PGY-5	PGY-6
Orientation	1	—	—
Wards	3	1	—
Echo	3	1	—
Cath	2	1	—
EP	2	1	—
Research	1	5	7
Consult	1	1	—
Intensive Care	—	3	1
Adult Congenital Clinic/cMRI	—	—	2
Electives	—	—	3

**Inpatient Rotation:** During the clinical rotation, in year one, fellows become familiar with clinical features of congenital heart defects. In the second and third years, they become conversant with these, as well as their surgical and medical treatment. By the third year, they have experienced the majority of clinical cardiac problems and should be able to evaluate and treat these independent of faculty.

**Echocardiography (echo):** In year one, training in basic echo is completed, and manipulative and cognitive skills in 2-D and Doppler assessment are mastered. By the end of the second year, fellows should be able to confidently complete complex segmental analysis. During the third year, basic skills in fetal echo and transesophageal echo are learned.

**Catheterization:** During the first year, fellows learn basic catheter manipulation skills and fundamentals of hemodynamic interpretation. By the end of the second year, these skills are refined so that basic diagnostic procedures, although supervised, can be performed mostly unassisted. In addition, specialized skills of intervention, such as balloon valve dilatation, angioplasty and device placement, are refined.

**Electrophysiology (EP):** During the first year, fellows become proficient in the diagnosis and management of common pediatric arrhythmia. In the second and third years, fellows learn the indications and basic principles for invasive EP testing, catheter ablation, tilt table testing, transesophageal pacing and indications for cardiac pacing; in addition to interrogation and programming of pacemakers and implantable cardiac devices (ICD). Fellows also learn about atrial electrograms with temporary pacing wires and pace termination of atrial arrhythmia in an Intensive Care Unit.

**Research:** In year one, fundamentals of research principles, ethics of human investigation and experimental design are examined. In the second year, research continues with research projects and presentations, and with manuscript submission to a peer-reviewed journal, as well as a presentation at a national meeting. Researchers supported by the National Institutes of Health (NIH) collaborate and actively participate in the program.

**Intensive Care:** Fellows gain an understanding of the preoperative, surgical and postoperative management of newborns and children with complex congenital heart

defects. Fellows also gain an understanding of the medical management of complex dysrhythmia; heart failure, including cardiac transplant management; ventricular assist devices and extracorporeal membrane oxygenation (ECMO). In addition, fellows become proficient in obtaining vascular access and performing intubations, ventilator management and management of inotropic support agents.

**Cardiac MRI:** Fellows will gain knowledge of cardiac MRI (cMRI) principles, imaging planes and protocols. In addition, they will be able to conduct a basic interpretation including quantifying function, vessel flow and developing 3-D models. By the end of their fellowship, fellows will learn to make recommendations based on the findings of the cMRI.

**Adult Congenital Heart Disease:** In collaboration with Emory University School of Medicine, we participate in one of the largest adult congenital heart disease programs in the United States. Fellows rotate through this clinic, which is supervised by adult cardiologists at Emory Healthcare and pediatric cardiologists at Sibley Heart Center Cardiology.

**Electives:** Electives can be designed to suit an individual fellow's interest. Some possibilities are transplant, anesthesia, genetics or pain management. Other resources in the Emory University community, such as the Centers for Disease Control and Prevention (CDC), are available for electives.

**Continuity Clinic:** Fellows participate in weekly, continuity clinics. Here, they develop a comprehensive understanding of the outpatient diagnosis and management of congenital heart disease and the need for continuous follow-up during these patients' lifetimes and into adulthood.

**Teaching:** Throughout the training program, fellows prepare and present lectures and conferences to audiences of medical students, residents, faculty and guests of the Children's Sibley Heart Center. Each year fellows present at our annual echo meeting, which is a national event. Each fellow maintains a teaching portfolio.

**Family-centered Care and Support:** Fellows learn to talk to families about the new diagnosis of a congenital heart defect and its ramifications, as well as communicating with them about evolving changes in their pediatric patients' treatment. As team members, fellows participate in daily medical rounds and all cardiology conferences.

## Conferences

Angiography Review	Journal Club
Cardiac Catheterization Conference	Morbidity and Mortality
Chief of Service Rounds	MRI Conference
Cardiac Intensive Care Unit/Cardiac Step-down Unit Service Rounds	Pathology Conference
Core Curriculum Lecture	Research Conference
Echo Lunch and Learn	Weekend Echo Review

## 2006 Program Statistics

Fellows	12
Full-time cardiology attendings	34
Outpatient clinics	18
Patient visits	60,309
Cardiothoracic surgeries	887
Heart transplants	13
Interventional catheterizations	343
Diagnostic catheterizations	328
Electrophysiology studies	216
Ablations (radiofrequency and cryoablation)	169
Myocardial biopsies	337
Transthoracic echos	28,570
Transesophageal echos	540
Fetal echos	593
Stress tests	401
Cardiac MRIs	657

## Children's Healthcare of Atlanta

Children's, a not-for-profit organization, is one of the country's leading pediatric healthcare systems.

- Named among the best pediatric hospitals in the country by *U.S. News & World Report*
- Ranked as one of the top three pediatric hospitals in the nation by *Child* magazine
- Operates three hospitals
- More than half a million annual patient visits
- Access to more than 1,400 physicians in more than 30 pediatric specialties

As part of the Children's at Egleston renovation and expansion plan, the Children's Sibley Heart Center added beds and new equipment, moved to a more centralized and larger location within the hospital, and enhanced services and amenities for families in 2007.

## Emory University School of Medicine

The Emory University School of Medicine's three-part mission encompasses teaching, scholarship and service.

- One of the nation's largest graduate medical training programs
- More than 1,000 residents and fellows in more than 74 accredited primary care and specialty medicine programs
- Seven owned or affiliated teaching hospitals
- Faculty members are responsible for 2,975 hospital beds and more than 2.2 million patient encounters annually
- Emphasizes problem solving within the context of excellent patient care, advanced biomedical research, preventive medicine and ethical concerns

## Prerequisites for Fellowship

In order to be considered, the applicant must have completed an ACGME-accredited, three-year pediatric residency or a combined internal medicine and pediatrics four-year training program by the beginning of the Fellowship program.

## Application Requirements Checklist

- Completed online application at [www.choa.org/cardiologyfellowship](http://www.choa.org/cardiologyfellowship)
- Curriculum vitae
- Three letters of recommendation
  - Division head of pediatric cardiology
  - Faculty resident adviser
  - A professional of your choosing
- Copy of Dean's letter and evaluation
- Medical school transcript
- Personal statement
- Copies of United States Medical Licensing Examination™ (USMLE) scores
- Immigration visa copy (if applicable)
- Educational Commission for Foreign Medical Graduates® (ECFMG) certificate (if applicable)

## Application Timeline and Selection Procedure

We participate in the National Resident Matching Program (NRMP) for the selection of first-year fellows. Applicants apply program code directly to the department and register with the NRMP. Our program code is **11130550**.

### Sept. 1: Applications acceptance begins.

### Jan. 31: Deadline for application completion.

Applicants notified by e-mail when application requirements are complete. No applications are considered after this date.

**February to April:** Selected applicants are invited to interview. Applicants who are not invited to interview are not ranked.

**May:** Fellowship Selection Committee ranks applicants on basis of prior performance, letters of recommendation, personal interviews and academic promise. The committee meets at the end of the interview process to review the interviewed applicants and prepare the rank order list for the NRMP.

## Contact Information

For questions or more information, please visit [www.choa.org/cardiologyfellowship](http://www.choa.org/cardiologyfellowship) or contact:

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### Gillian Carpenter, M.D.

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Co-director, Cardiac Intensive Care Unit

### Rose M. Cummings, D.O.

### Kenneth J. Dooley, M.D.

### Peter S. Fischbach, M.D., M.A.

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Physicians at the Children's Sibley Heart Center are faculty members at Emory University School of Medicine.

Some physicians and affiliated healthcare professionals who perform services at Children's Healthcare of Atlanta are independent providers and are not our employees.