



Walter H. Merrill, MD
John B. Flege, Jr. Professor
Chief, Section of
Cardiothoracic Surgery
Walter.Merrill@uc.edu
513.584.3278

The Section of Cardiothoracic Surgery

The Section of Cardiothoracic Surgery, comprising the Division of Cardiac Surgery and the Division of Thoracic Surgery, continues on the forefront of advances in the treatment of patients with cardiothoracic diseases, including the application of minimally invasive techniques for cardiac and thoracic disorders such as atrial fibrillation and lung cancers.

The Section's experience and expertise continues to grow in minimally invasive cardiac and thoracic surgery, including robotic-assisted surgery and minimally invasive treatment for atrial fibrillation, lung cancer and other disorders. The increased referral of patients from throughout the country for the specialized care offered at the University of Cincinnati has resulted in the ongoing growth in clinical programs involved in treating tumors of the mediastinum, minimally invasive removal of lung tumors, and specialized treatment of heart disease.

Collaborative relationships with the Division of Pediatric Cardiothoracic Surgery at Cincinnati Children's Hospital Medical Center and the Divisions of Cardiology, Pulmonary Medicine, and Oncology of the Department of Internal Medicine offer both young and adult patients a multidisciplinary approach to cardiac and thoracic disease.

In 2004 the ACGME granted accreditation for a residency training program in cardiothoracic surgery. The first resident in the program, Dr. John Mehall, began his training on July 1, 2004. Dr. Mehall was elected President of the Thoracic Surgery Residents Association (TSRA) and was a director for the TSRA-sponsored Resident Cardiothoracic Technology Symposium which has been held each spring since 2006 at the University of Cincinnati (see the website at www.ctsymposium.org). Dr. Mehall completed his training in cardiothoracic surgery June 30, 2007. Our second cardiothoracic surgery resident, Dr. Jeffrey Garrett, has recently completed his training. Our current residents are Dr. Julian Guitron and Dr. Lynn Huffman.

The residency training program provides three continuous years of clinical training in cardiothoracic surgery, with one new resident starting each year. Residents rotate on adult cardiac surgery at University Hospital and at the Good Samaritan Hospital, on general thoracic surgery at University Hospital, and on pediatric cardiac surgery at Cincinnati Children's Hospital Medical Center.

The Division of Cardiac Surgery

The Division of Cardiac Surgery leads the region in the discovery and advancement of innovative treatment for patients with cardiac disease. Programs in robotic-assisted and minimally invasive surgical techniques, as well as the development and application of bio-tech advances such as the growth of new blood vessels, have made the cardiac program at the University of Cincinnati a state-of-the-art referral center for both standard and complex cases.

Patient Care

Clinical services are performed at University Hospital, the Veterans Affairs Medical Center, and the Cincinnati Children's Hospital Medical Center. The Division performs a wide variety of operative procedures in patients with cardiac and vascular diseases, including off-pump coronary revascularization, modified MAZE procedure for atrial fibrillation without the need for a sternal incision, left ventricular assist device (LVAD) insertion, as well as all-arterial myocardial revascularization and mitral valve repair. The Division is alone in the Tristate in offering chronic long-term LVAD support for heart failure, and it serves as a hub center for referral of patients requiring specialized cardiac care. An additional focus is the treatment of adults with congenital heart disease.

Surgeons and physicians at the UC Heart & Vascular Center continue their innovative treatment of heart patients with a growth factor protein (FGF1) in an attempt to grow new myocardial blood vessels (angiogenesis). The procedure involves injecting the growth factor directly into the heart to trigger new blood vessel growth to increase blood flow around blocked arteries and to relieve the chest pain associated with coronary artery disease. The UC Heart & Vascular Center is one of a small number of U.S. medical centers involved in an early-stage clinical trial to test myocardial injection of FGF1 as a method to relieve chest pain.

The collaborative rounds program established in 2005 continues to be highly successful in raising the standard of patient care in the cardiac intensive care unit at University Hospital. The collaborative round brings together everyone involved in the treatment and recovery of heart surgery patients including the patient, surgeons, nurses, pharmacists, nutritionists, rehabilitation providers, social workers, clergy, and family in one place at the same time. Studies



conducted by Harvard confirm improved patient care, outcomes and satisfaction.

As part of the collaborative effort, the CICU nurses have collaborated with the diabetes specialists at University Hospital and with the cardiac anesthesiologists to develop patient care protocols that are aimed at controlling blood glucose levels in patients undergoing cardiac surgical procedures. This multidisciplinary team approach has led to improvement in blood glucose values, and there is evidence to suggest that this will lead to better overall outcomes and especially a lowered risk of infection. An outgrowth of the effort to control blood glucose levels perioperatively has been an increased focus on postoperative follow-up and care of diabetic patients once they leave the hospital.

Education

PGY-1 residents and mid-level residents are offered one- and two-month rotations, respectively, on the service. Third year medical students rotate on the service as part of their surgery clerkship, and a month-long clerkship is offered to 4th-year medical students.

Members of the Division actively collaborate with colleagues in adult cardiology and pediatric cardiac surgery and offer a broad array of educational conferences and laboratory research opportunities. Dr. Peter Manning and his colleagues from Cincinnati Children's Hospital Medical Center teach pediatric cardiothoracic surgery to residents both at that institution and at the University of Cincinnati College of Medicine.

All the faculty participate in weekly cardiothoracic teaching conferences, cardiac catheterization conference, and roundtable discussions with the residents.

The mandatory reduction in resident work-hours led to the recruitment of physician assistants to reduce the clinical workload of faculty and residents, allowing additional time for research and other academic pursuits.



The Section of Cardiothoracic Surgery and the University of Cincinnati College of Medicine offer a course called "Summer Surgery Experience at UC." This two-week immersion program teaches undergraduates from various colleges the art and science of surgery. Participants are exposed to cardiac anatomy and physiology, learning cardiac diagnostic techniques, receiving hands-on experience in the clinical skills lab, learning about the DaVinci robot, and shadowing in the operating room. The students also perform library research on several clinical cases and give a presentation at the close of the program. John Flege Jr., MD, serves as director of the program.

Research

David Melvin, MD, PhD, continues to apply his advanced training in Biomedical Engineering to discover breakthroughs in ventricular performance and its enhancement and support with various mechanical techniques. Dr. Melvin was chosen to serve on UC's Intellectual Property Committee which will provide advice to the vice president for research in numerous areas related to intellectual property and the administration of the university's patent and copyright policies.

Community Connections

Dr. Flege continues as the Associate Editor of the journal *INNOVATIONS in Cardiothoracic Surgery*, which is the official journal of the International Society for Minimally Invasive Cardiac Surgery.

Dr. Merrill continues as chair of the Society of Thoracic Surgeons Workforce on Graduate Medical Education and Resident Issues. He also serves as a member of the Joint Council on Thoracic Surgical Education, and he was recently appointed to the Residency Review Committee for Thoracic Surgery.

The UC Heart & Vascular Center hosted a number of free educational lecture series for the lay public and for local

physicians and nurse practitioners, with a focus on highlighting heart and vascular health and describing new technology and therapies to treat various heart and vascular conditions.

The Division of Pediatric Cardiothoracic Surgery

The Division of Pediatric Cardiothoracic Surgery is dedicated to the surgical care of children with cardiac problems. Based at Cincinnati Children's Hospital Medical Center (CCHMC), the Division has formed a strong collaborative relationship with the Section of Cardiothoracic Surgery. As an integrated component of The Heart Institute, a multi-disciplinary business unit within CCHMC, the Division has enjoyed a continually higher profile nationally as a leader in the management of cardiac problems in children. The clinical programs of the Division continue to provide excellent care, with morbidity and mortality rates rivaling any program nationwide.

Members of the Division of Cardiothoracic Surgery function as key faculty of the Pediatric Cardiology and Pediatric Critical Care fellowship training programs at CCHMC. Close interaction with these fellows occurs on a daily basis, primarily in the Cardiac Intensive Care Unit, in addition to a number of weekly teaching conferences in which the faculty participates. The Division serves as one of the primary rotations of the Cardiothoracic Surgery training program based at UC.

The clinical programs in The Division of Pediatric Cardiothoracic Surgery focus on surgical management of cardiac problems from birth through adolescence. The Division also has become more involved in the Fetal Cardiology program, participating in prenatal counseling of families with children with congenital heart defects. The focus is on complete correction of cardiac defects in the newborn, management of complex single ventricle cardiac anomalies, and techniques to limit transfusion exposures.



The program has the capability of performing all levels of open and closed heart operations, including cardiac transplantation and the ability to perform ECMO support. The annual review of state-wide data for pediatric cardiac programs recently revealed that Cincinnati Children's Hospital continues to perform the highest volume of newborn open heart procedures in Ohio.

Research continues to be actively pursued in the Division of Pediatric Cardiothoracic Surgery. Dr. Duffy's research lab has focused on mechanisms underlying reperfusion and reoxygenation injury in the immature cardiopulmonary system. Dr. Eghtesady's lab has been productive and continues research in the field of experimental fetal open-heart surgery in order to correct congenital malformations in the womb. Research on fetal cardiopulmonary bypass was accepted for oral presentation at four prestigious international meetings this year and included presentation of the first ever successful fetal intracardiac surgery while on cardiopulmonary bypass support. The lab also continues its collaborative efforts with Professor Kenneth Clark from the UC Department of Obstetrics and Gynecology.

Faculty

Walter H. Merrill, MD, FACS

John B. Flege, Jr. Professor
Chief, Section of Cardiothoracic Surgery

Dr. Merrill specializes in adult heart surgery and congenital heart disease in adults. He is certified by the American Board of Surgery and the American Board of Thoracic Surgery.

John B. Flege, Jr, MD, FACS

Professor of Surgery

Dr. Flege specializes in adult heart surgery. He is certified by the American Board of Surgery and the American Board of Thoracic Surgery.

Dwight E. Hand, MD, PhD

Assistant Professor of Surgery

Dr. Hand specializes in adult heart surgery, including minimally invasive approaches and robotic-assisted cardiac surgery. He is certified by the American Board of Thoracic Surgery.

David B. Melvin, MD, PhD

Associate Professor of Surgery
Professor of Biomedical Engineering

Dr. Melvin specializes in heart transplantation and mechanical support of the failing heart. He is certified by the American Board of Surgery and the American Board of Thoracic Surgery.



Faculty - Division of Pediatric Cardiothoracic Surgery

Peter B. Manning, MD, FACS

Professor of Clinical Surgery
Director, Pediatric Cardiothoracic Surgery

Dr. Manning specializes in complete correction of newborn cardiac diseases and blood conservation in cardiac surgery. He is certified by the American Board of Surgery (General Surgery, Pediatric Surgery, and Surgical Critical Care) and the American Board of Thoracic Surgery.

Piروز Eghtesady, MD, PhD

Assistant Professor of Surgery

Dr. Eghtesady specializes in congenital heart surgery and fetal heart surgery. He is certified by the American Board of Surgery and the American Board of Thoracic Surgery.

Jodie Y. Duffy, PhD

Associate Professor of Surgery and Pediatrics

Dr. Duffy's research is focused on the cellular and molecular pathways that regulate reoxygenation and reperfusion injury in the immature cardiopulmonary system.

Further information on the Division of Cardiac Surgery can be viewed on our website <http://surgery.uc.edu>.