At the Gill Heart Institute our strategic aspiration is to advance cardiovascular care by being a national leader and innovator in comprehensive patient-centered care, research, education, and collaboration.

Our mission is to provide:

– Seamless, high quality, and comprehensive care that is patient- and family-centered
– Value to those we serve (patients, families, referring providers, partners, payers) across the care continuum, at the most appropriate level of care, and at the right location across Kentucky and beyond
– Cutting edge innovation and discovery research as a platform for current and future care
– Leadership in education.

In December 2014 our adult cardiovascular hospital service relocated from older areas of the medical center to occupy the two towers of the 8th floor of Pavilion A. This includes an impressive 32-bed cardiovascular ICU – one of the largest in the country – with specialized facilities to handle the complex cardiovascular and transplant cases that we receive as an academic hub.

Once a free-standing structure, the Gill building’s outer walls now form the northern end of the atrium of the 1.2 million-square-foot Pavilion A of the Albert B. Chandler Hospital. The expansion in the physical footprint of UK HealthCare has been matched by extraordinary growth in the medical center’s academic stature.

Our greatest asset is our faculty – a multidisciplinary team of physicians and scientists, who draw from disciplines of cardiovascular medicine, cardiac and vascular surgery, radiology, anesthesiology, pharmacy, physiology, pharmacology, biomedical engineering and more.

As the region’s top teaching and research center, supported by the NIH-funded Kentucky Center for Clinical and Translational Science, our bench-to-bedroom approach ensures that patients benefit from nearly “real-time” scientific advances.

Participation in clinical trials is an integral part of our cardiovascular service, which allows us to offer treatments not available elsewhere in the state or the region. With our state-of-the-art facilities and the most advanced and appropriate care, we are improving patient outcomes and setting the standard for clinical care.

The following pages describe our service, accomplishments, and our rich history in the field of cardiovascular medicine. In them, you will see evidence of our commitment to achieving the utmost standards in the diagnosis and treatment of heart and vascular disease and our dedication to scholarly pursuits that will improve the future of heart health in Kentucky and beyond.

Michael Sekela, MD
Professor of Surgery,
Surgical Director,
Cardiac Transplantation

Susan S. Smyth, MD, PhD
Jeff Gill Professor of Cardiology
Chief, Division of
Cardiovascular Medicine
Director, Gill Heart Institute

Justin Campbell, MBA, MSHA
Assistant Hospital Director
(Cardiovascular, Respiratory, Radiology, Rehab Services)
"Firmly grounded on the pillars of academic health care — clinical care, research and education — UK HealthCare is building relationships in Kentucky and beyond to strengthen local health care delivery and ensure the citizens of the Commonwealth have access to the advanced subspecialty care they need."

2015 State of the Heart

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53  Heart Failure, Transplant and Mechanical Circulatory Support
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69  Cardiovascular Education
The opening of the eighth floor of UK Albert B. Chandler Hospital marked the next step in UK HealthCare’s mission to provide patients with the latest advances in heart care in an environment carefully designed to promote healing.

The Cardiovascular Services floor includes a 32-bed cardiovascular intensive care unit (ICU), making it one of the largest of its kind in the nation.

The dedicated heart care floor also features a 32-bed unit for telemetry and progressive care.

Locating heart patients in one area enables our team of expert doctors, nurses and other care providers to easily communicate and share knowledge and resources. Patients benefit from an experienced team that provides around-the-clock care for heart disease.

**Designed for safe, high-quality care**

The Cardiovascular Services floor, like all floors in UK Chandler Hospital Pavilion A, is designed to provide the safest, most efficient care for patients.

The floor is designed to position nurses at a patient’s bedside and reduce the time spent away from patient care. Each patient room is equipped with a nurse work station right outside the door.

Important diagnostic testing and other equipment are located directly on the heart care floor. This means patients who require an echocardiogram can receive it near their hospital room, which minimizes wait times and prevents patients from having to move around to different areas of the hospital.

Floor 8 is the first in Pavilion A to take advantage of a barcode medication system. This process improves patient safety by minimizing the potential for medication errors.

**A healing environment**

Keeneland Race Course and Maker’s Mark have generously supported UK HealthCare and the UK Gill Heart Institute by providing art and features to create a healing environment. Waiting areas feature equine-themed artwork. Bright, airy waiting rooms are comfortably furnished to provide a relaxed, welcoming environment for visitors.

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**Soprano Camille Zamora performs in honor of the opening of the Cardiovascular Services Floor**

Camille Zamora has appeared with ensembles including LA Opera and Glimmerglass Opera and with collaborators ranging from Plácido Domingo to Sting. A graduate of Juilliard School, she has performed recitals on five continents and live concerts on NPR, BBC Radio, Deutsche Radio and Sirius.

She has been recognized by the Congressional Hispanic Caucus and named one of CNN’s “Most Intriguing People,” NY1’s “New Yorker of the Week” and one of the “Top 50 Americans in Philanthropy” by Town & Country magazine. A regular contributor to The Huffington Post and a leading voice in the “citizen artist”
discussion, Zamora has performed and spoken at the Fortune Most Powerful Women’s Summit, Aspen Ideas Festival and the United Nations.

Zamora is the co-founding director of Sing for Hope, a leading nonprofit that brings art outreach programs to communities in need and presents initiatives that make the arts accessible to all. By leveraging volunteer service of hundreds of dedicated artists, Sing for Hope provides programs ranging from collaborative hospital concerts for patients, to after-school arts classes to The Sing for Hope Pianos, 88 artist-designed instruments placed throughout the parks and public spaces of New York City for anyone and everyone to enjoy.

By Whitney Hale
In an academic health center, research and clinical success are synergistic and interdependent. A strategic collaboration between the clinical and the academic enterprises will enhance the success of both beyond what would occur with an investment of either alone.

BOWMAN, MA, ET AL. 2007
Adult Cardiovascular Medicine

Faculty and staff committed to patient-centered care
Inpatient Services

The Gill Heart Institute’s clinical care programs target the extraordinary incidence of heart disease in the region. Our physicians, scientists, nurses, and staff are committed to the highest level of care and to delivering safe and appropriate treatments. Superb clinical care is provided by more than 150 nursing and clinical staff who manage adult and surgical cardiovascular cases in an integrated intensive care unit and in acute-care beds on a dedicated cardiovascular floor.

A quaternary destination site, our case-mix index, a measure of the clinical complexity of the care (based on associated medical conditions) has risen above the 75th percentile among teaching hospitals. As an example, hypothermia, EKOS ultrasound-accelerated catheter-based delivery of thrombolytic drugs, percutaneous and surgically-implanted ventricular assist devices, and extracorporeal membrane oxygenation (ECMO) technology, are employed daily in the intensive care unit.

Heart Failure Care

Patient given discharge instructions

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<th>UK HealthCare</th>
<th>KY average</th>
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<tr>
<td>Patient given discharge instructions</td>
<td>100%</td>
<td>91%</td>
<td>95%</td>
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Patient given an evaluation of left ventricular systolic (LVS)

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<td>Patient given an evaluation of left ventricular systolic (LVS)</td>
<td>100%</td>
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Patient given ACE inhibitor or ARB for left ventricular dysfunction (LVSD)

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<td>100%</td>
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While the care we provide has become more complex and diverse, we maintain the highest standards of clinical care for quality. A testament to this is the Gill’s recent receipt of the 2015 Get with the Guidelines – Resuscitation Gold Quality Achievement Award from the American Heart Association. The award signifies that the institute has reached an aggressive goal in using guidelines based care to improve patient outcomes from in-hospital cardiac arrest.

**Cardiogenic Shock**

The Gill Heart Institute is a regional destination site for the management of patients in cardiogenic shock. In keeping, the proportion of cardiogenic shock patients among our interventional cases is almost five-fold that of other U.S. hospitals. We have amassed expertise in the management of cardiogenic shock with the use of complex mechanical hemodynamic support that includes a team of critical care cardiologists, interventionalists, and CT surgeons who work seamlessly, and in 24/7-fashion, to provide support options ranging from percutaneous ventricular assist devices to ECMO.

**Pulmonary Embolism**

As one of the SEATTLE trial sites, we have expertise in the use of a catheter-based ultrasonic system (EKOS, or Ekosonic<sup>®</sup> endovascular system) to deliver thrombolytic therapy in the pulmonary arteries and peripheral vessels and catheter-based approaches for thrombectomy (AngioVac). In close collaboration with the emergency department, 24-hour multidisciplinary Pulmonary Embolism teams rapidly assess patients for appropriateness for catheter-directed thrombolytic therapy.

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**Acute Myocardial Infarction Care**

**Aspirin at discharge**

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**Percutaneous coronary intervention (PCI) within 90 minutes of arrival**

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<td>100%</td>
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**Prescription for a statin at discharge**

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ADULT CARDIOVASCULAR MEDICINE

Outpatient Visits

General cardiology services at the Gill Heart Institute includes preventive cardiology, sophisticated diagnostic and treatment services, and referral as needed, to one of our dedicated cardiology specialty programs. Our team excels in collaboration, bringing together physicians from all areas of cardiology to create an individualized diagnosis and treatment program for patients.

Housed within the Gill Heart building, the heart center provides all patient care in the same location, including clinics, non-invasive cardiac diagnostics, and interventional cardiac techniques such as cardiac catheterization, angioplasty and electrophysiology. The Gill also provides a base for the physicians providing this care, and has special focus on counseling cardiac patients and their families.
Cardiovascular Wellness and Rehabilitation

UK’s Cardiac Rehabilitation and Wellness Program offers a comprehensive program of medical evaluation, supervised exercise, risk-factor modification, and medication optimization, to improve the chance of survival and lower the risk of another cardiac event. The cardiac rehab team includes cardiologists, a cardiac nurse specialist, exercise physiologists, and registered dieticians.

Working with the team, each patient learns how to lower his or her own risk of future cardiac events and become more educated about heart disease. Another aspect is to increase physical activity levels and improve their quality of life. Once structured cardiac rehabilitation is completed, individuals may enroll in the “OH” program for Optimal Health, an ongoing cardiovascular risk-reduction plan to help patients maintain and improve their lifestyle and healthy habits.

Cardiovascular Rehabilitation Outcomes Data

* Data Source: The American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR) University of Kentucky Institutional Outcomes Report for year 2014.
Women’s Heart Health Program

Cardiovascular disease is the leading cause of death in U.S. women with nearly a quarter of a million women dying from coronary heart disease, heart failure and stroke every year. Indeed, more women will die from these causes than from the top five forms of cancer combined. Women in Kentucky die from heart disease at a rate 23 percent higher than the national average. Nearly 80 percent of all cardiac events in women could be prevented if women made the right choices for their hearts involving diet, exercise and abstinence from smoking.

Recent studies show that women with suspected heart disease are less likely than men to be referred for diagnostic testing and less likely to undergo invasive testing or aggressive early treatment. This gender bias alone is reason enough for women to take a proactive role in understanding their risk of heart disease. For these reasons, the Gill Heart Institute’s Women’s Heart Health Program was created to serve the needs of women by providing a comprehensive approach to their cardiac care.

The Women’s Heart Health Program is dedicated to offering support, education and clinical services to help women prevent and live with heart disease. The program is led by a team of female cardiologists and nurse practitioners with advanced training in cardiovascular medicine. Our faculty is actively engaged in understanding why heart disease is different in men and women and optimizing strategies for the treatment of women patients.

National Wear Red Day
Women are more worried about breast cancer and yet, more are going to die of coronary heart disease or stroke.”

Thomas F. Whayne Endowed Professorship in Women’s Heart Health

Through the generous donation from Dr. Thomas F. Whayne Jr. MD, PhD, a Professorship has been established in Women’s Heart Health.

UK HealthCare’s Gill Heart Institute has named Dr. Gretchen Wells as its new director of Women’s Heart Health. Wells comes from Wake Forest University in Winston-Salem, North Carolina, where she was most recently medical director of the Cardiac Care Unit and Inpatient Cardiology Services and directed the outpatient women’s cardiac program. She received her medical degree from the University of Alabama School of Medicine, where she also completed a PhD in medical genetics.

Wells completed her residency and a clinical fellowship in cardiology at Wake Forest. Her interests include heart failure mechanisms in women, neurocardiology and noninvasive cardiology. As director of Women’s Heart Health at the Gill, Dr. Wells looks to combine her knowledge of cardiovascular disease with continued research on conditions that affect both pregnant and post-menopausal women, particularly in the area of gender differences in the presentation of heart disease.

Dr. Whayne has numerous honors and awards that span his entire career. The breadth of knowledge, expertise and dedication to cardiovascular disease that Dr. Whayne brings to UK is immeasurable and the Professorship in Women’s Heart Health will serve to strengthen current efforts in bringing awareness and further research in cardiovascular disease in Women.

Whayne’s gift also honors his father, Tom F. Whayne, an early leader at the UK Medical Center, who joined the faculty as an Associate Dean in 1963.
Cardiovascular Interventions

A culture of innovation
Operating in four, state-of-the-art catheterization laboratories situated in 20,000-square-feet on the second floor of the Gill building, our team of cardiologists, nurses, pharmacists, and technicians employ sophisticated technologies for complex cases safely and with exceptional outcomes. UK’s contributions to interventional cardiology are not new – intravascular ultrasound imaging of human coronary arteries was born at UK in the late-1980s; we have been engaged in transcatheter approaches to valve disease since the mid-1980s; and, our interventional cardiology training program at UK was one of the first-ever established in the U.S.

Coronary Interventions
As a tertiary center, the cardiac catheterization laboratory performs complex coronary interventions. In addition to standard coronary angioplasty, we have special expertise in more complex interventional approaches that provide a higher level of diagnostic accuracy. Increasingly, we use the radial approach for greater comfort during the procedure and earlier ambulation after the procedure. 80% of our diagnostic cases and 50% of our interventional coronary procedures are performed via the radial artery.

Peripheral Interventions
In addition to coronary procedures, UK interventional cardiologists are also highly experienced in peripheral and cerebrovascular interventional procedures. Many of these procedures are referred to the Gill from other hospitals for their complexity, and require innovative approaches such as transpopliteal access, subintimal dissection with ultrasound-guided re-entry, and/or atherectomy. We also perform extra-cranial cerebrovascular interventions including subclavian, vertebral, and carotid angioplasty and stenting. The team has been part of the national FDA-mandated registry that examined the outcomes of carotid stenting following approval of devices for clinical use, and is committed to the highest technical success and utmost attention to patient safety.

UK’s hybrid OR suite is optimal for collaborative procedures between interventional cardiologists and CT surgeons for the many challenging, high-risk cases referred to us.
Anti-Coagulation Consult Service

The Gill Heart Institute recently established a multidisciplinary anticoagulation and thrombosis team (MAC) to promote optimal clinical outcomes and minimize adverse events associated with these high-risk medications.

The anticoagulation and thrombosis team began as a unique inpatient service with members drawn from a group of subspecialty trained pharmacists and physicians with expertise in vascular medicine. Led by George A. Davis, Pharm D, BCPS, and supported by vascular medicine specialists Drs. Susan Smyth and Eleftherios Xenos, the service suggests the most appropriate anti-coagulation therapy for individual patients, including duration and monitoring.

In recognition of the need to improve transition of care (TOC) management for high-risk patients, MAC opened a TOC clinic in Jan 2015. Dr. Davis staffs the clinic and provides key continuity between the hospital and ambulatory settings for high-risk patients. He performs medication reconciliation, reinforces patient education, and ensures follow-up with the established monitoring plan.
Clinical Trials

**SURTAVI: Transcatheter valve replacement in patients at intermediate surgical risk**

UK was recently chosen by Medtronic to participate in SURTAVI, a study to evaluate the safety and efficacy of Transcatheter aortic valve implantation in patients with severe, symptomatic Aortic Stenosis at intermediate surgical risk. Currently, only patients at high risk for surgery are eligible for TAVI; this study could potentially increase availability of this technology to more patients in the future. The study will use the currently approved Medtronic CoreValve system, and will also be looking at a newer valve system called Evolute R.

**Bioabsorbable Stents**

For decades, cardiologists opened blocked coronary arteries using balloons and followed that by implanting stents that act like scaffolds to maintain the patency of the artery. Traditionally, stents are a permanent implant made of metal. The ABSORB IV trial will test a new stent called the Absorb Biodegradable Vascular Scaffold (BVS), a scaffold made of a polymer that can be completely absorbed by the body after the artery heals.

As with metal stents, the BVS is covered by a drug coating that prevents excessive scar tissue from re-narrowing the artery. The BVS, the coating and the drug all dissolve approximately 12-24 months after the procedure. The hope is that the artery recovers its ability to respond to the heart’s needs for more blood flow with activity. Gill is one of 40 centers in the U.S. participating in this landmark clinical trial, which aims to enroll 3,000 patients nationwide.

**Regenerative Medicine and Cell Therapy**

“When someone has a heart attack, we shift into maintenance mode by prescribing medicines and other treatments to prevent another heart attack, but we can’t reverse the damage that’s already done,” said Dr. Ahmed Abdel-Latif, professor at the University of Kentucky’s Gill Heart Institute. “With all of our advances in cardiovascular medicine, there is currently only one approved way to repair damaged heart tissue after a heart attack: with a heart transplant.”

An average of 21 people die every day in the U.S. waiting for an organ transplant, according to the Organ Procurement and Transplantation Network (OPTN) and the Gift of Life Donor Program. Clearly, transplant isn’t a very elegant solution due to the limited number of donor hearts available and the lifetime of maintenance required to avoid complications post-transplantation. Furthermore, heart transplants often aren’t a viable option for the very sick or those with co-morbidities such as pulmonary hypertension. But stem cells—which have the potential to grow into a variety of heart cell types—might repair and regenerate damaged heart tissue, and research at the Gill Heart Institute is looking into that concept.
One such study, called ALLSTAR (ALLogenic cardiac Stem cells to Achieve myocardial
Regeneration) is looking into the possibility that stem cell therapy can repair damaged
heart tissue after a recent heart attack. These patients often suffer long-term consequences
of their heart attack, slipping into heart failure and potentially requiring an expensive and
risky heart transplant.

Eric Mason is one of the first patients to enroll in the ALLSTAR trial at the Gill. He was just 35
years old when he had a life-threatening heart attack. Mason had blockages in all three of his
arteries—80 percent, 90 percent and, in the left coronary artery, 100 percent. His type of heart
attack is nicknamed “the widow maker” because so few patients survive.

Eric Mason was taken to the cath lab at the Gill Heart Institute from the emergency room
in Richmond. There, Dr. Latif inserted three stents—small devices that prop open blocked
arteries, restoring blood flow. But while the stents helped prevent further injury, his heart
attack had already caused a dangerous amount of irreversible damage. Before Eric left the
hospital, Latif approached him about joining the ALLSTAR study.

“Eric was an ideal candidate for the study because younger patients with moderate to severe
damage to the heart muscle are the ones most likely to benefit from stem cell therapy,” Dr.
Latif said. “Without treatment, it’s likely Eric would spend a lifetime crippled by heart failure
and/or require a heart transplant.”

Six months after Eric’s heart attack, Dr. Latif snaked a catheter into Eric’s heart from a small
incision in Eric’s wrist. Positioning the catheter as closely as possible to the area of damaged
tissue, Dr. Latif released a fluid containing either about 25 million stem cells harvested from
the heart tissue of volunteer donors or a placebo.

“This treatment has enormous potential to improve the lives of thousands of people who
suffer heart attacks each year,” Dr. Latif said. “When someone donates their heart today, it
can saves the life of one other person, but if we are able to harvest stem cells from one donor
heart, we might be able to save the lives of dozens of people.”

By Laura Dawahare and Allison Perry

“With all of our advances in cardiovascular medicine, there is currently only one approved
way to repair damaged heart tissue after a heart attack: with a heart transplant.”
Cardiology Faculty

**Susan S. Smyth, MD, PhD**  
Jeff Gill Professor of Cardiology  
Chief, Division of Cardiovascular Medicine  
Medical Director, Gill Heart Institute  
- General cardiology  
- Antithrombotic therapy

**Lacey T. Buckler DNP, RN, ACNP**  
Director, Cardiovascular Nursing Services  
Co-Director, Office of Advanced Practice  
- Cardiovascular outcomes  
- Transition of care

**Melina Aguinaga-Meza, MD**  
Assistant Professor of Medicine  
- General cardiology  
- Critical care cardiology  
- Women’s heart health

**Paul Anaya, MD, PhD**  
Associate Professor of Medicine  
- Echocardiography  
- Nuclear cardiology  
- Critical care cardiology

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- Heart disease prevention

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Heart Station  
- Electrocardiography

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Dedicated Pharmacy Specialists

Nine doctors of pharmacy, six of whom are board-certified, and four with added qualifications in cardiology, provide comprehensive and individualized review of care for Gill Heart patients. Hospitalized patients benefit from 24-hour clinical pharmacy coverage and daily medication review by our pharmacy team members. Cardiology pharmacy faculty are jointly appointed to the UK College of Pharmacy, one of the Top Five Colleges of Pharmacy in the nation, according to U.S. News & World Report. Our pharmacy services are one of only eighteen accredited Cardiology Pharmacy Residency training programs in the country.

Tracy E. Macaulay, PharmD
Assistant Professor of Pharmacy-Adjunct
Director, CV Pharmacy Services

Sarah Brouse, PharmD
Associate Professor of Pharmacy-Adjunct
Cardiovascular Pharmacy Clinical Coordinator

Terri Cook, PharmD
Cardiovascular Clinical Pharmacist

Craig J. Beavers, PharmD
Cardiovascular Clinical Pharmacist

George A. Davis, PharmD
Anticoagulation Pharmacy Specialist

Jessie Dunne, PharmD
Cardiovascular Clinical Pharmacist

Jeremy Flynn, PharmD
Assistant Professor of Pharmacy and Surgery-Adjunct
Mechanical Circulator Support and Heart/Lung transplant Clinical Pharmacy Specialist

Komal Pandya, PharmD
Cardiovascular Clinical Pharmacist

Heather Hesselson, PharmD
Cardiovascular Clinical Pharmacist
Interventional Cardiology Faculty

John C. Gurley, MD
Professor of Medicine
Director of Interventional Cardiology
• Coronary, structural heart and vascular interventions
• Transcatheter valve procedures
• Emerging technologies

David C. Booth, MD
Endowed Professor of Medicine
Director, Pulmonary Hypertension Chief, Cardiology, Lexington VAMC
• Coronary interventions
• Acute cardiac disease
• Pulmonary hypertension
• Heart and lung transplantation

Ahmed Abdel-Latif, MD, PhD
Assistant Professor of Medicine
• Coronary interventions
• Stem cell therapy

Adrian Messerli, MD
Associate Professor of Medicine
• Coronary interventions
• Peripheral vascular interventions

David J. Moliterno, MD
Jack M. Gill Professor and Chairman
Department of Internal Medicine
Vice Dean of Clinical Affairs
• Coronary interventions
• Ischemic heart disease

Lawrence Rajan, MD
Assistant Professor of Medicine
• Coronary interventions
• Peripheral vascular interventions

Khaled M. Ziada, MD
Gill Foundation Professor of Interventional Cardiology
Director, Cardiac Catheterization Laboratories and Interventional Fellowship Program
• Coronary and peripheral interventions
• Transcatheter valve procedures
• Carotid interventions

ADULT CARDIOVASCULAR MEDICINE
Advanced Practice Providers – Inpatient

Leesa Schwartz, APRN
Kim Hardin, APRN
Candice Falls, APRN
Vicky Turner, APRN
Kelley Weaver, APRN
Paula Works, APRN
Carla Zacher, APRN

Discharge Planners and Social Workers

Krista Lewis, RN
Stacy Ford, RN
Melissa Jones, RN
Marie Wohlstein, RN

Gill Operations Administration

Kimberly G. Pennington, MHA, RN
Nursing Operations Administrator

Julie E. Coffey, MHA, FACHE
Cardiovascular Operations Director

not pictured
Mary Vanderhoof, PA
Christina Sealy, PA
Courtney Ortz
Social Worker
Katelyn King
Transitions of Care Coordinator
Advanced Practice Providers – Outpatient

David H. McRae, PA-C
Bridget Pagan, PA-C
Charlene Broaddus, RN, APRN
Stephanie Copher, APRN
Mary Jane Cowherd, PA
Melissa Czarapata, APRN

Ambulatory Cardiology Administration
Jami Kyle, RN BSN
Ambulatory Manager
Shawynita Washington
Patient Services Coordinator
Gill Office
Melanie Rice
Manager and Coordinator
Maxwell Office
Jason T. Wireman
Practice Manager ARH Hazard Hazard and Harlan Offices

not pictured

Peggy Hardesty, MSN, APRN, CHFN
Martha Biddle, APRN, CNS, PhD
Publications

**Wayne TF Jr.** Methyleneetrahydrofolate Reductase C677T Polymorphism, Venous Thrombosis, Cardiovascular Risk, and Other Effects. *Angiology*. 2015 May; 66(5):401-4


**Campbell CL, Moliterno DJ.** Potential hazards of adding nonsteroidal anti-inflammatory drugs to antithrombotic therapy after myocardial infarction: time for more than a gut check. *JAMA*. 2015 Feb 24; 313(8):801-2

**Whayne TF Jr, Mukherjee D. Women, the menopause, hormone replacement therapy and coronary heart disease. *Curr Opin Cardiol*. 2015 Feb 18


**Kido K, Brouse SD, Macaulay TE, Charnigo RJ, Anaya P.** Dose Related Patterns of Ventricular Anhrythmia due to Carvedilol Withdrawal in Patients with Systolic Heart Failure. *Curr Drug Saf*. 2015 Apr 27

randomized controlled trials. Cir Res. 2015 [In Press].


Publications (continued)


Clinical Trials

The Gill Heart Institute Cardiology Research Center is designed to facilitate all aspects of patient-based clinical research. This includes coordination of Phase I-IV multicenter trials, support of the infrastructure for clinical trials as well as education of faculty and fellows in clinical research methodology.

Cardiovascular Inflammation Reduction Trial (CIRT)
Primary Investigator: Adrian Messerli, MD

Aegis-I: CSL112 in subjects with Acute MI
Primary Investigator: John Kotter, MD

Renal Denervation in Patients with Uncontrolled Hypertension - Symplicity HTN-3 Trial
Primary Investigator: Khaled M. Ziada, MD

ACCELERATE “Assessment of Clinical Effects of Cholesterol Ester Transfer Protein Inhibition with Evacetrapib in Patients at a High-Risk for Vascular Outcomes”
Primary Investigator: Khaled M. Ziada, MD

A Randomized, Multi-Center, Placebo-Controlled, Parallel Group Study to determine the Effects of AMG-145 Treatment on Atherosclerotic Disease Burden As Measured By Intravascular Ultrasound in Patients Undergoing Coronary Catheterization.
Primary Investigator: Khaled M. Ziada, MD
Clinical Trials (continued)

**ABSORB IV A Clinical Evaluation of Absorb™ BVS, the Everolimus Eluting Bioresorbable Vascular Scaffold in the Treatment of Subjects with de novo Native Coronary Artery Lesions**
*Primary Investigator: Khaled M. Ziada, MD*

**YouScripts IMPACT Registry**
*Primary Investigator: Khaled M. Ziada, MD*

**Glagov Open Label Extension Study**
*Primary Investigator: Khaled M. Ziada, MD*

**DIVA Drug-Eluting Stents vs. Bare Metal Stents in Saphenous Vein Graft Angioplasty**
*Primary Investigator: Khaled M. Ziada, MD*

**TCAP Randomized Trial of Ticagrelor for Severe Community Acquired Pneumonia**
*Primary Investigator: Susan S. Smyth, MD PhD*

**Opus Registry**
*Primary Investigator: David C. Booth, MD*

**Emanate: A Phase IV Trial to Assess the Effectiveness of Apixaban Compared with Usual Care Anticoagulation in Subjects with Non-Valvular Atrial Fibrillation Undergoing Cardioversion**
*Primary Investigator: Adrian Messerli, MD*

**INTREPID: An open label, randomized study to determine the rate of cardiovascular events at 1 year for patients with elevated troponins post major non-cardiac surgery and the impact of ticagrelor versus aspirin on the occurrence of cardiovascular events**
*Primary Investigator: Susan Smyth, MD, PhD*

**SPYRAL HTN-OFF MED: Global Clinical Study of Renal Denervation with the Symplicity Spyral™ multi-electrode renal denervation system in Patients with Uncontrolled Hypertension in the Absence of Antihypertensive Medications**
*Primary Investigator: Khaled Ziaa, MD*

**SPYRAL HTN-ON MED: Global Clinical Study of Renal Denervation with the Symplicity Spyral™ i multi-electrode renal denervation system in Patients with Uncontrolled Hypertension on Standard Medical Therapy**
*Primary Investigator: Khaled Ziaa, MD*

**PreSERVE AMI: Prospective Randomized Double Blinded Placebo Controlled Phase II Trial of Intra-coronary Infusion of AMR-001, a Bone Marrow Derived Autologous CD34+ Selected Cell Product, in Patients with Acute Myocardial Infarction**
*Primary Investigator: Ahmed Abdel-Latif, MD PhD*

**ALLSTAR Allogeneic Heart Stem Cells to Achieve Myocardial Regeneration in patients with ischemic heart failure**
*Primary Investigator: Ahmed Abdel-Latif, MD PhD*

**DREAM HF Efficacy and Safety Study of Allogeneic stem cells in Patients with Chronic Heart Failure Due to Left Ventricular Systolic Dysfunction of Either Ischemic or Nonischemic Etiology**
*Primary Investigator: Ahmed Abdel-Latif, MD PhD*

**International Study of Comparative Health Effectiveness with Medical and Invasive Approaches (ISCHEMIA)**
*Primary Investigator: David C. Booth, MD*

**PREMIUM Migraine Trial: Prospective Randomized Investigation to Evaluate Incidence of Headache Reduction in Subjects with Migraine and PFO Using the AMPLATZER PFO Occluder Compared to Medical Management**
*Primary Investigator: John C. Gurley, MD*

**AMPLATZER Cardiac Plug (ACP) Clinical Study – Feasibility Study**
*Primary Investigator: John C. Gurley, MD*

**GORE HELEX Septal Occluder and Antiplatelet Medical Management for Reduction of Recurrent Stroke or Imaging-Confirmed TIA in Patients Foramen Ovale (PFO) (the REDUCE Study)**
*Primary Investigator: John C. Gurley, MD*

**RE-DUAL PCI: A prospective Randomised, open label, blinded endpoint (PROBE) study to Evaluate DUAL antithrombotic therapy with dabigatran etexilate plus clopidogrel or ticagrelor vs. triple therapy strategy with warfarin plus clopidogrel or ticagrelor and aspirin in patients with non valvular atrial fibrillation (NVAF) that have undergone a percutaneous coronary intervention (PCI) with stenting**
*Primary Investigator: Adrian Messerli, MD*

**XENITH: Rivaroxaban for Pulmonary Embolism managed with catheter directed thrombolysis**
*Primary Investigator: Susan Smyth, MD, PhD*

**TWILIGHT Study: Ticagrelor with Aspirin or Alone in High-Risk Patients After Coronary Intervention**
*Primary Investigator: David Molieterno, MD*
Gill Heart Network

WORLD-CLASS CARE
CLOSE TO HOME

Manchester Memorial Hospital
Cardiology Clinic
In affiliation with
UKHealthCare
Gill Heart Institute
Affiliates and Outreach

Our cardiologists provide the region’s most comprehensive services, diagnostic assessment, and therapeutic strategies at 17 locations in Kentucky and even beyond the state’s borders in West Virginia. Working closely with local physicians and hospitals, we help broaden treatment options by providing access to the latest therapeutic advances, whether it’s providing a much-needed specialist in the local community, remote interpretation of a test through tele-radiology, or accepting the transfer of a critically ill patient at UK hospital in Lexington.

The Gill Heart Institute has created a network to provide care across the commonwealth through various methods including placing UK physicians in community hospitals, developing affiliations, and through a co-management agreement for Cardiovascular Services with Appalachian Regional HealthCare.

For the past two years UK HealthCare and Appalachian Regional HealthCare (ARH) have worked together to jointly administer and manage cardiovascular services at seven of the 10 ARH Hospitals including Hazard, Harlan, Mary Breckenridge, Whitesburg, McDowell, Tug Valley, and Middlesboro.

Over the last year the Gill Heart Institute has developed its Gill Heart Affiliate Network which includes the ARH Hospitals across Eastern Kentucky, Clark Regional Medical Center in Winchester, KY, Georgetown Community Hospital in Georgetown, KY, and Manchester Memorial Hospital in Manchester, KY. These relationships have allowed services to be tailored to the needs of each community.

• UK cardiologist and Chief of Internal Medicine at Georgetown Community Hospital Joseph Thomas, MD, provides daily heart care to patients hospitalized at Georgetown Community Hospital in Georgetown, Kentucky, as well as in outpatient settings. Thomas is also medical director of Cardiac Rehab Heart Failure and Coumadin Clinic services at Georgetown.
• UK cardiologist, Michael McKinney, MD, provides interventional cardiology in Somerset at Lake Cumberland.
• At Clark Regional Medical Center in Winchester, UK cardiologist Charles Salters, MD, provides general cardiology for patients both in the hospital and Clark’s outpatient clinic.
• Yousef Darrat, MD, provides Electrophysiology services in Rockcastle and in Whitesburg and Hazard starting in 2015.
• Electrophysiology, interventional and general cardiology are among the services provided by Gill Heart cardiologists at Rockcastle Regional Hospital, located in Mount Vernon, Ephraim McDowell Regional Medical Center in Danville, and at St. Claire Regional Medical Center in Morehead, Kentucky.
• Advanced heart failure clinics are held in Louisville and West Virginia and UK’s cardiac transplant program works in partnership with hospital systems outside of Kentucky to list patients for heart transplant.

Cardiothoracic surgeon, James Shoptaw, MD, performs CT procedures — including coronary revascularization and heart valve replacements — at ARH-Hazard. In conjunction with the co-management agreement, Appalachian Heart Center with locations in Hazard, KY and Harlan, KY, joined the Gill Heart Institute in 2013. Dr. Vidya Yalamanchi, Dr. Srini Appakondu, and Dr. Rao Podapati provide cardiology services at the Gill Heart Institute Appalachian Heart Centers in Hazard and Harlan as well as at the Hazard and Harlan ARH hospitals, allowing patients there to continue to see the same local doctors and receive the latest medical treatments without leaving their community. The Gill Heart Institute is working closely with Mountain Comprehensive Healthcare to improve heart care in eastern Kentucky. This outreach is delivered via ARH Cardiology Associates in affiliation with the Gill, offering cardiology services at the Mountain Comprehensive Clinic in Whitesburg, which serves the people of Letcher, Harlan, Perry, Owsley and adjacent counties. Additionally, in July 2014, the Gill entered an affiliation agreement with Manchester Memorial Hospital in Manchester, Kentucky, where ARH cardiologist Keerthana Karumbaiah, MD and Lynda Otalvaro, MD, now practice inpatient and office-based general cardiology.
Affiliates and Outreach Map

Outreach locations

Cardiovascular Medicine
1. Louisville
   Norton Audobon Hospital
2. Danville
   Ephraim McDowell Regional Center
3. Somerset
   Lake Cumberland Regional Hospital
4. Mount Vernon
   Rockcastle Regional Hospital
5. Morehead
   St. Claire Regional Medical Center
6. Huntington, WV
   Marshall University (not shown)

Cardiothoracic Surgery
1. Danville
   Ephraim McDowell Regional Center
2. Winchester
   Clark Regional Medical Center
3. Morehead
   St. Claire Regional Hospital
4. Mount Vernon
   Rockcastle Regional Hospital
5. Cynthiana
   Harrison Memorial Hospital

Affiliate Partners
1. Georgetown
   Georgetown Community Hospital
2. Winchester
   Clark Regional Medical Center
3. Harlan
   Harlan ARH Hospital
4. Hyden
   Mary Breckinridge ARH Hospital
5. Hazard
   Hazard ARH Regional Medical Center
6. Whitesburg
   Whitesburg ARH Hospital
7. McDowell
   McDowell ARH Hospital
8. South Williamson
   Tug Valley ARH
9. Manchester
   Manchester Memorial Hospital
10. Middlesboro
    Middlesboro ARH Hospital
Heart Network
Relationships pay off for Kentucky Physician Facing his own Health Crisis

Roy Varghese, MD, a primary care physician in Eastern Kentucky had uncomfortable symptoms – much like indigestion – throughout the day. When the pain persisted through dinner, he told his wife it was time to go the hospital.

ARH doctors administered life-saving, stabilizing therapies to begin treating the heart attack and quickly transferred Varghese to ARH Hazard for more advanced cardiac care.

Varghese’s colleagues, Gill Heart Institute Appalachian Heart Center cardiologists Vidya Yalamanchi, MD, and Rao Podapati, MD, and ARH cardiologist Syed Bokhari, MD, worked together to perform diagnostic heart catheterization and a life-saving coronary angioplasty to reopen blocked coronary arteries and restore blood flow to the heart.

Heart care has come a long way in Eastern Kentucky. Yalamanchi credits the advancement of cardiac care in the region to the medical staff in Hazard for their commitment to enhance patient care, along with support from key mentors at UK HealthCare. Yalamanchi was proctored and trained to perform diagnostic catheterizations in the early 1990s by David Booth, MD, and John Gurley, MD, two UK Gill Heart Institute cardiologists. According to Yalamanchi, both Booth and Gurley have been great mentors to help build the services currently available in Hazard.

And ironically, Varghese, who is currently chief of staff at Mary Breckinridge ARH Hospital, has been highly instrumental in the recruitment and retention of the cardiologists who now serve the community.

“Today we can intervene in a timely and effective manner, and even have the ability to perform open heart surgery right here in our community,” said Yalamanchi. “We’ve come a very long way.”

In very critical condition, Varghese was flown to UK Albert B. Chandler Hospital in Lexington for the advanced cardiac care available from the UK Gill Heart Institute.

Less than a week later, Varghese was discharged from Chandler Hospital and transferred to an outpatient cardiac rehabilitation center in Cincinnati where he spent a month continuing his recovery before returning to home and work in Hyden.

By Teri Smith  
Edited by Jan Taylor, Paula Heron
Gill Heart Network Physicians

Rick McClure, MD
Professor of Medicine
Director, Gill Heart Network

Srini R. Appakondu, MD
Appalachian Heart Center

Keerthana Karumbaiah, MD
Manchester Memorial Hospital

Vidya Yalamanchi, MD
Appalachian Heart Center

Charles Salters, MD
Assistant Professor of Medicine
Clark Regional Medical Center

Joseph Thomas, MD
Assistant Professor of Medicine
Georgetown Community Hospital

Rao Podapati, MD
Appalachian Heart Center

Syed Bokhari, MD
ARH-Hazard

Kenneth Dulnuan, MD
ARH-Williamson

Pablo Lopez, MD
ARH-Whitesburg

Georges Damaa, MD
ARH-Harlan

not pictured

Michael McKinney, MD
Assistant Professor
Lake Cumberland Regional Hospital

Lynda Otalvaro, MD
Manchester Memorial Hospital
Cardiothoracic Surgery

At UK, surgeons collaborate with researchers and clinicians at the Markey Cancer Center, UK Transplant Center, and at the Saha Cardiovascular Research Center. With this bench-to-bedside approach, we continually improve and advance surgical techniques so that patients with complex and advanced diseases can live more productive and fulfilling lives. As UK HealthCare has grown, the scope and breadth of CT surgery has expanded exponentially and our cardiovascular services are more comprehensive, with a higher level of expertise. Michael Sekela, MD, continues to bring his extensive skill and experience in complex cardiac surgery, reoperative procedures, and innovative valve surgeries such as robotic mitral valve repair. In partnership with interventional cardiologist John C. Gurley, MD, Michael Sekela, MD, and Hassan Reda, MD, initiated the MitraClip program. The MitraClip therapy is the first percutaneous mitral valve repair therapy available, providing an option for select patients with significant symptomatic degenerative mitral valve disease.

Our faculty also provides CT surgery to underserved communities in eastern Kentucky. Our collaboration with Appalachian Regional Healthcare continues to expand as we enhance clinical services and educational opportunities to clinicians in the region. James Shoptaw, MD, practices full time in Hazard, offering cardiothoracic surgery services at our affiliates so that patients can remain close to home for as much of their medical care as possible.
Surgical approaches to atrial fibrillation

For patients whose atrial fibrillation (AF) cannot be managed through medications or catheter-based ablation, Dr. Theodore S. Wright provides expertise in the innovative and minimally invasive MAZE procedures. The video-assisted MAZE procedure includes creation of lines of conduction that block the abnormal impulses that cause AF, enabling restoration of normal sinus rhythm. This is accomplished using cryoablation or radiofrequency energy. In collaboration with interventional cardiologist, Dr. John C. Gurley, video-assisted surgical ablation may also include exclusion of the left atrial appendage, the primary source of strokes in patients with atrial fibrillation.

Adult Cardiac Surgery Cases, 2014

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABG</td>
<td>367</td>
</tr>
<tr>
<td>VALVE</td>
<td>216</td>
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<tr>
<td>CABG/VALVE</td>
<td>47</td>
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<tr>
<td>TAVR</td>
<td>26</td>
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<tr>
<td>MAZE</td>
<td>14</td>
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<td>AORTIC ANEURYSM</td>
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<td>VASCULAR SURGERY</td>
<td>50</td>
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<tr>
<td>OTHER</td>
<td>135</td>
</tr>
<tr>
<td>ROBOTICALLY ASSISTED2</td>
<td>30</td>
</tr>
</tbody>
</table>

1 MAZE – represents both concomitant and sole surgical management of AF
2 Robotically assisted cases includes both cardiac and thoracic service lines
Cardiothoracic Surgery Faculty

Sibu P. Saha, MD, MBA
Frank C. Spencer, MD, Endowed Chair in Surgery
Professor of Surgery and Bioengineering
Chief, Division of Cardiothoracic Surgery
Chairman, Director’s Council of Gill Heart Institute
• Thoracic surgery
• Open and endovascular surgery for arterial occlusive and aneurysmal diseases
• Device therapy for resistant hypertension

Maher Baz, MD
Professor of Surgery and Medicine
• Lung Transplantation
• Mechanisms and Treatment
• Frailty and Outcomes after Transplantation

Victor A. Ferraris, MD, PhD
Tyler Gill Professor of Surgery
• Thoracic Surgery
• Transfusion medicine/blood conservation
• Hemostatic agents
• Platelet function in lung cancer

Angela L. Mahan, MD
Assistant Professor of Surgery
• Thoracic oncology
• Minimally invasive thoracic surgery
• Foregut surgery

Maher Baz, MD
Professor of Surgery and Medicine
• Lung Transplantation
• Mechanisms and Treatment
• Frailty and Outcomes after Transplantation

Jeremiah T. Martin MB, BCh
Assistant Professor of Surgery
• Video-assisted thoracic surgery
• Thoracic oncology
• Surgical robotics (da Vinci)
• Foregut surgery
• 3-port esophageal resection

Timothy W. Mullett, MD
Professor of Surgery
• Video-assisted thoracic surgery
• Navigational bronchoscopy/Ebus-guided biopsy for lung cancer staging
• Endobronchial stent, deployment of endobronchial valve and ablative procedures

Hassan K. Reda, MD
Associate Professor of Surgery
• Valvular heart disease
• Coronary artery revascularization
• Surgery for aneurysm of thoracic aorta
• Transcatheter aortic valve replacement (TAVR)

Michael Sekela, MD
Surgical Director, Cardiac Transplantation
Professor of Surgery
• Coronary artery revascularization
• Transmyocardial revascularization
• Robotic mitral valve surgery
• Reoperative /complex adult cardiac surgery / thoracic aneurysm

Alexis Shafii, MD
Surgical Director, Lung Transplantation
Associate Professor of Surgery
• Adult Cardiac Surgery
• Heart & Lung Transplantation
• Mechanical Circulatory Support

James H. Shoptaw, Jr., MD
Assistant Professor of Medicine
• ARH-Hazard
Cardiothoracic Surgery Research Faculty

Paul B. Tessmann, MD, PharmD
Assistant Professor of Surgery
- Cardiothoracic Surgery
- Heart & Lung Transplantation
- Mechanical Circulatory Support
- Critical Care & Extracorporeal Life Support

Theodore S. Wright, MD
Assistant Professor of Surgery
- Robotic cardiac surgery
- Surgical approaches to atrial fibrillation
- Valve repair and replacement
- Coronary artery revascularization

Joseph B. Zwischenberger, MD
Johnston-Wright Professor and Chairman
Surgeon-in-Chief, UK HealthCare
- Acute respiratory failure
- Esophageal cancer
- Lung cancer

Cherry Ballard-Croft, PhD
Assistant Professor of Surgery
- Ischemic heart disease
- Ventricular assist devices (VADs)

Dongfang Wang, MD, PhD
Associate Professor of Surgery
Director of Artificial Organ Laboratory
- Heart and lung assist devices
- Paracorporeal artificial lung
- LVAD-Plug and Play transapical to aorta mini LVAD
The division’s faculty have authored surgical textbooks and invented surgical techniques considered cutting edge in the field of vascular medicine.

Led by Eric M. Endean, MD, the division’s faculty have authored surgical textbooks and invented surgical techniques considered cutting edge in the field of vascular medicine. While both open and endovascular techniques are utilized for treatment of our patients, UK vascular surgery faculty are especially interested in translating the latest findings into minimally invasive surgical procedures for some of the most complicated cases in the region.

UK houses an advanced and nationally certified vascular laboratory dedicated to ultrasound and imaging tests. Together with state-of-the-art computerized tomography and MRI technology, our vascular imaging capabilities enable the diagnosis and severity of vascular disease before any invasive procedure is undertaken.

Many of the vascular surgeries are performed in UK’s state-of-the-art hybrid operating room, which is equipped with all the tools needed for treating the most complex vascular conditions. The new hybrid, catheterization/OR is the only one of its kind in the region. Here, doctors can perform both open surgery and catheter-based procedures guided by fluoroscopy and ultrasound. The space allows our program’s team to provide unparalleled comprehensive care to challenging, high-risk patients.

The vascular surgery faculty is actively involved in research pertaining to the development of endovascular techniques, acute mesenteric ischemia, effects of obesity on surgical outcome, and treatment of aneurysms. They are joined by basic and translational investigators with international recognition in developing preclinical models for studying the development and progression of abdominal aneurysms. Led by Alan Daugherty, PhD, DSc, UK researchers have been instrumental in defining the role of inflammation in the disease process and non-surgical therapy for abdominal aortic aneurysm.

Our surgeons are also committed to education of surgery residents, who rotate on the vascular and endovascular surgery service during their first, third and fifth years of training, and gain experience in major vascular operations including carotid, aortic, and lower extremity revascularizations.

Further advanced training in vascular and endovascular surgery is offered through an ACGME-approved fellowship. The fellowship is two years in duration, with the first year focusing primarily on open vascular surgical reconstructions. The second year includes an intensive endovascular experience and training in the non-invasive vascular laboratory.
Vascular and Endovascular Surgery Faculty

**Eric D. Endean, MD**
Gordon J. Hyde Endowed Professor of Vascular Surgery
Chair, Vascular Surgery Program
- Abdominal aortic aneurysm
- Carotid artery disease
- Mesenteric ischemia
- Peripheral vascular occlusive disease

**Joseph L. Bobadilla, MD**
Assistant Professor of Vascular Surgery
Medical Director of General Surgery Clinics
- Carotid stenting
- Endovascular open thoracic aortic aneurysm repair
- Spinal ischemia after complex aortic surgery
- Venous disease

**David J. Minion, MD**
Professor of Vascular Surgery
Director of the Vascular Surgery Fellowship Program
- Carotid stenting
- Cerebrovascular arterial disease
- Endovascular aortic aneurysm repair
- Ischemic nephropathy
- Thoracic aneurysm repair

**Nathan Orr, MD**
Assistant Professor of Vascular Surgery
- Carotid artery disease
- Abdominal aortic aneurysms and dissections
- Mesenteric ischemia
- Peripheral artery disease and critical limb ischemia
- Dialysis access
- Venous disease

**Eleftherios S. Xenos, MD, PhD**
Associate Professor of Vascular Surgery
Associate Chief Medical Director
Medical Director of Patient Safety
Medical Director of Vascular Laboratory
- Abdominal aortic aneurysm
- Dialysis access
- Renovascular hypertension
- Thoracoabdominal aneurysm

**Amy Lipscomb, MD**
Associate Professor of Vascular Surgery
Medical Director of Wound Clinic
- Medical Director of Wound Clinic
- Endovascular and open aortic aneurysm repair
- Peripheral artery occlusive disease
- Carotid artery disease
- Complex wound management

**not pictured**
Cardiothoracic Surgery Publications

Publications from this division represent our activities in both clinical and basic research.


Vascular Surgery Publications


CT Surgery Clinical Trials

\textbf{Platelet Function in Early Stage Lung Cancer - A Pilot Study}  
\textit{Primary Investigator: Victor A. Ferraris, MD, PhD}

\textbf{Comparison of Operative Risk Scoring Algorithms as Applied to a Local Series of Cardiothoracic Surgery Patients}  
\textit{Primary Investigator: Victor A. Ferraris, MD, PhD}

\textbf{Surgery for Infective Endocarditis, A Retrospective Review of Outcomes}  
\textit{Primary Investigator: Victor A. Ferraris, MD, PhD}

\textbf{Endocarditis, A Retrospective Review of Outcomes}  
\textit{Primary Investigator: Victor A. Ferraris, MD, PhD}

\textbf{The Impact of Blood Transfusion in Blunt and Penetrating Trauma}  
\textit{Primary Investigator: Victor A. Ferraris, MD, PhD}

\textbf{An Early Feasibility Study of Perfusion-Induced Hyperthermia for Metastatic Non-Small Cell Lung Carcinoma}  
\textit{Primary Investigator: Jeremiah T. Martin, MB, BCn}

\textbf{Does Surgical Upstaging in Resected Lung Cancer Depend on the Surgical Approach?}  
\textit{Primary Investigator: Jeremiah T. Martin, MB, BCn}

\textbf{A Randomized, Double-Blind, Phase III Efficacy and Safety Study of PF-00299804 vs. Erlotinib for the treatment of Advanced Non-Small Cell Lung Cancer following Progression after, or intolerance to, at least One Prior}  
\textit{Primary Investigator: Timothy W. Mullet, MD}

\textbf{KCTN Data Coordinator}  
\textit{Primary Investigator: Timothy W. Mullet, MD}

\textbf{A Prospective Study with the IBV Valve System for the Treatment of Prolonged Air Leak}  
\textit{Primary Investigator: Timothy W. Mullet, MD}

\textbf{Safety and Effectiveness of the Spiration Valve System in Air Leaks VAST (Valves Against Standard Therapy)}  
\textit{Primary Investigator: Timothy W. Mullet, MD}

\textbf{Spiration IBV Valve System-Humanitarian Use Device}  
\textit{Primary Investigator: Timothy W. Mullet, MD}

\textbf{A Phase 2b, Randomized, Double-Blind, Placebo-Controlled, Safety and Efficacy Trial of Multiple Dosing Regimens of ABT-719 for the Prevention of Acute Kidney Injury in Subjects Undergoing High Risk Cardiac Surgery}  
\textit{Primary Investigator: Hassan K. Reda, MD}

\textbf{M13-958: A Phase 2b, Randomized, Double-Blind, Placebo-Controlled, Safety and Efficacy Trial of Multiple Dosing Regimens of ABT-719 for the Prevention of Acute Kidney Injury in Subjects Undergoing High Risk Major Surgery}  
\textit{Primary Investigator: Hassan K. Reda, MD}

\textbf{A Prospective, Multicenter, Randomized, Double-Blind, Placebo-Controlled Study to Evaluate the Safety and Efficacy of Preoperative Antithrombin Supplementation in Patients Undergoing High-Risk Cardiac Surgery with Cardiopulmonary Bypass}  
\textit{Primary Investigator: Hassan K. Reda, MD}

\textbf{Rheos Pivotal Trial}  
\textit{Primary Investigator: Sibu Saha, MD, MBA}

\textbf{TachoSil - A Randomized, Open-Label, Parallel-Group, Multi-Center Trial to Compare Efficacy and Safety of TachoSil versus}
CT Surgery Clinical Trials (continued)

Surgical Original for the Secondary Hemostatic Treatment of Needle Hole Bleeding in Vascular Surgery

Primary Investigator: Sibu Saha, MD, MBA

A Prospective, Single-Blind, Randomized, Phase III Study to Evaluate the Safety and Efficacy of Fibrin Sealant Grifols (FS Grifols) as an Adjunct to Hemostasis During Peripheral Vascular Surgery.

Primary Investigator: Sibu Saha, MD, MBA

A Retrospective Review Comparing Outcomes of Iliac Artery Stenting Performed by Surgeons in an Operating Room Versus in a Catheterization Lab

Primary Investigator: Sibu Saha, MD, MBA

Retrospective review of Esophageal Stents at the University of Kentucky

Primary Investigator: Sibu Saha, MD, MBA

Retrospective review of Endovascular treatment for completely occluded Abdominal Aorta

Primary Investigator: Sibu Saha, MD, MBA

Endovascular Interventions with AngioMax: The ENDOMAX Trial

Primary Investigator: Sibu Saha, MD, MBA

Barostim neo®: the Baroreflex Activation Therapy (BAT) for Heart Failure

Primary Investigator: Sibu Saha, MD, MBA

Barostim neo® Legacy System – HUD #13-0307

Primary Investigator: Sibu Saha, MD, MBA

The Use of Near-Infrared Spectroscopy (NIRS) on Adult Patients on Extracorporeal Membrane Oxygenation (ECMO)

Primary Investigator: Sibu Saha, MD, MBA

Lobectomy/Wedge Resection for Lung Cancer: An Outcomes Analysis of 500 cases from 2002-2013

Primary Investigator: Sibu Saha, MD, MBA

Cardiac Tumors and Surgical Management: A Retrospective Review

Primary Investigator: Sibu Saha, MD, MBA

A Retrospective Review and Comparison of Open Thoracotomy Versus Video-assisted Thoracic Surgery (VATS) Lobectomy from 2009-2013

Primary Investigator: Sibu Saha, MD, MBA

Vascular Surgery Clinical Trials

A Randomized, Double-Blind, Parallel Group, Multicenter Phase IIIb Study To Compare Ticagrelor with Clopidogrel Treatment on the Risk of Cardiovascular Death, Myocardial Infarction and Ischemic Stroke in Patients with Established Peripheral Artery Disease (EUCLID – Examining Use of ticagrelor In paD)

Primary Investigator: Eric Endean, MD (Closed 03/14)

Impact of Resident Schedule on Patient Outcomes

Primary Investigator: Eric Endean, MD

Predicting Academic and Clinical Success in Surgical Training

Primary Investigator: Eric Endean, MD

Retrospective Chart Review: Occurrences of Abdominal Compartment Syndrome, Open vs. EVAR

Primary Investigator: Eric Endean, MD

Mesenteric Ischemia: Outcomes of Open Revascularization

Primary Investigator: Eric Endean, MD

Allowing Flexibility in Surgical Resident Duty Hours Trial

Primary Investigator: Eric Endean, MD

Clinical Study to Evaluate the Safety and Effectiveness of the Zenith® Branch Endovascular Graft-Iliac Bifurcation

Primary Investigator: David Minion, MD

Clinical Outcomes of Aortic Aneurysms (Retrospective Chart Review)

Primary Investigator: David Minion, MD

Clinical Outcomes of Aortic Aneurysms (Retrospective Chart Review)

Primary Investigator: David Minion, MD

Clinical Outcomes of the Snorkel Technique to Treat Juxtarenal Aortic Aneurysms (Retrospective Chart Review)

Primary Investigator: David Minion, MD

A Retrospective Review of Tricuspid Valve Surgery Patients with an AICD

Primary Investigator: Sibu Saha, MD, MBA

A Retrospective Review of Common Femoral Endarterectomy and Profundoplasty at the University of Kentucky

Primary Investigator: Sibu Saha, MD, MBA

Diffuse Optical Assessment of Peripheral Arterial Disease (PAD) and Revascularization

Co-Primary Investigator: Sibu Saha, MD, MBA

Impacts of Citrulline and Lycopene on Cardiovascular Health

Co-Primary Investigator: Sibu Saha, MD, MBA

dsRNA Cloning and Visualization in Human Atherosclerosis

Co-Primary Investigator: Sibu Saha, MD, MBA

INTERMACS-VDATION Database

Primary Investigator: Paul Tessmann, MD

HeRo (Hemodialysis Reliant Outflow) Graft Using Inside-out Central Venous Access: An Analysis of Outcomes (Retrospective Chart Review)

Primary Investigator: Eleftherios Xenos, MD

Clinical Outcomes of the Snorkel Technique to Treat Juxtarenal Aortic Aneurysms

Primary Investigator: David Minion, MD

Clinical Outcomes of Aortic Aneurysms

Primary Investigator: David Minion, MD

Clinical Outcomes of Parallel Endografts to Treat Complex Aortic Aneurysms

Primary Investigator: David Minion, MD
Heart Rhythm Program

The Gill Heart Institute’s Heart Rhythm Program brings together a team of certified cardiac electrophysiologists, cardiovascular surgeons, cardiologists and cardiac anesthesiologists for the management and treatment of cardiac rhythm disorders. Leading the team are UK electrophysiologists Samy-Claude Elayi, MD, and Gustavo Morales, MD, who have performed hundreds of procedures at UK Gill Heart Institute, in addition to the Cleveland Clinic and the University of Miami Hospital, respectively. Their collaborative approach enables the development of patient-centered, combination treatment therapies with high success and low complications rates.

Our services include implantation of MRI-compatible pacemakers, implantable cardioverter defibrillators (ICDs), including biventricular devices, device extraction and advanced ablation procedures for rhythm disturbances such as atrial fibrillation (AF), atrial flutter, supraventricular tachycardia or ventricular tachycardia. Our highly skilled team utilize the latest technology to perform procedures such as robotic systems, magnetic catheter guidance, or the latest 3-D mapping technology.

Custom treatments for atrial fibrillation

Treating a rhythm disturbance is highly complex and is based on multiple factors, such as the patient’s symptoms, co-morbidities or the clinical context. While some patients may require only adjustment of medical therapy, others may need interventions such as implantations of pacemakers or catheter ablations.

Research has shown catheter ablation to be superior to medical therapy in preventing AF episodes and potentially improving quality of life and heart function for the patient. Although catheter ablation is an effective treatment for AF, appropriate patient selection is necessary to achieve the best results.

For patients whose atrial fibrillation (AF) cannot be managed through medications or catheter-based ablation, CT surgeon Dr. Theodore S. Wright provides expertise in the innovative and minimally invasive video-assisted MAZE procedures. In collaboration with interventionalist Dr. John C. Gurley, the procedure may also include, or be limited to, the exclusion of the left atrial appendage, the primary source of strokes in patients with atrial fibrillation. The team is experienced in and offers both LARIAT and Atra Clip for appendage occlusion.

Clinical Cardiac Electrophysiology Fellowship

The Clinical Cardiac Electrophysiology Fellowship, directed by Gustavo Morales, MD, provides advanced training in electrophysiologic studies and ablation of a variety of arrhythmias, including atrial fibrillation and ventricular tachycardia. Trainees also learn about interrogation of devices, implantation of devices (pacemakers, ICDs, BiV-ICDs, loop monitors, and subcutaneous devices), and troubleshooting devices. With approximately 40 device implants, and 20 electrophysiology studies/ablation cases performed each month, fellows have ample opportunity to gain expertise in a wide variety of cases.
Jon Wes and Gardner Adams are 26-year old identical twins in every way. It’s nearly impossible to tell them apart. Though a few people claim Jon Wes smiles more than Gardner, their mannerisms and speech are identical.

But for eight weeks, they weren’t identical.

One day last summer Jon Wes drove to the Lexington Arboretum for his 8-mile run—but left in an ambulance. Six miles into his route, Jon collapsed. His heart had stopped beating—known as “sudden cardiac arrest.” Fortunately, he collapsed in the middle of a concert. Some medical professionals in attendance began performing “Bystander CPR” to keep Jon alive.

“Jon was very lucky to collapse where he did,” says Dr. Alison Bailey, director of Prevention and Cardiac Rehabilitation at the Gill Heart Institute and the cardiologist who cared for Jon during his stay at UK HealthCare. “‘Bystander CPR’ kept him alive until emergency medical personnel arrived. It’s unlikely he would be with us now without it.”

Tests would later confirm that Jon had Brugada Syndrome, a rare genetic disease that can cause ventricular fibrillation (a lethal arrhythmia) of the heart. Sudden cardiac arrest in Brugada Syndrome patients is relatively rare, but the risk is increased if a family member has had an abnormal rhythm.

A team from the Gill Heart Institute implanted a device in Jon’s chest that detects abnormal heart rhythms and will attempt to “shock” the heart back to a steady, normal heartbeat if this happens again. It’s a miniature version of the paddles doctors use to bring patients back to life in television dramas. Jon will live with this internal cardiac defibrillator for the rest of his life, returning for battery changes and regular follow-up tests.

By then, Dr. Bailey knew that Jon had a twin—an identical twin. She put Gardner through the same series of tests. He had Brugada Syndrome as well.

Eight weeks after Jon Wes had surgery, Gardner went through the same procedure to implant an ICD.

His first words out of surgery: “Hey mom—we’re identical again.”

By Laura Dawahare
Electrophysiology Publications


**Morales GX**, Darrat Y, Leung Steve, **Elayi CS**. Left atrial access via an unroofed coronary sinus to eliminate fast/slow atypical AVNRT. Heart Rhythm Case Reports 2015 (in press)

**Anaya, Paul and Elayi, SC**. Old Dog, New Tricks - Usefulness of the ECG in Monitoring Pre-Excitation. *Heart Rhythm Case Reports* 2015 (in press)


Electrophysiology Clinical Trials

The Gill Heart Institute is the site of many national clinical trials for heart rhythm disorders such as atrial fibrillation. For more information, please contact Jennifer Isaacs at 859-323-4738.

A Multi-center Efficacy of Intravenous Infusions of OPC-108459 Administered to Subjects with Paroxysmal and Persistent Atrial Fibrillation (CADENCE)

Primary Investigator: Samy-claude Elayi, MD

VEST/VEST Registry Non-invasive wearable automatic defibrillator vest will reduce mortality in first 90 days post MI in pts w/ LV dysfunction (≤35%)

Primary Investigator: Samy-claude Elayi, MD

Enhance CRT: CRT Implant Strategy using the longest electrical delay for non-LBB patients; randomized, post-market pilot study

Primary Investigator: Gustavo Morales, MD
Cardiovascular Imaging

SEEING INSIDE THE HEART
CARDIOVASCULAR IMAGING

Advanced Cardiovascular Imaging

Imaging is the backbone of cardiovascular care today. UK’s Advanced Cardiovascular Imaging Program provides Computed Tomography (CT) and Magnetic Resonance Imaging (MRI) of the heart and great vessels for adult and pediatric patients. The Gill Imaging Center will soon be getting the latest state-of-the-art FDA approved CT scanner. This is a 384 slice dual detector system that will allow us to obtain the entire cardiac image exam during 1-2 heart beats. The impact of this technology is less radiation exposure, less contrast and a higher quality image. With this scanner the reduction in radiation exposure is significant (>90% reduction compared to previous exposure).

Two MRI scanners – the 1.5 Tesla and 3.0 Tesla – expand UK’s advanced imaging capabilities. In addition to routine 3-D volumetric, functional, contrast viability cardiac MRI studies, real-time, 3-D time-resolved MRA, and pharmacologic stress MRI is regularly performed. LV strain imaging has become a recent addition. Cardiovascular MRI (CMR) stress examinations are safer, quicker, and more accurate than nuclear stress testing, and an important area of diagnostic growth for the Gill Imaging Center. Also, the Gill is one of only a few sites in the country that routinely perform MRI scans in certain patients with pacemakers and ICDs. Fewer centers still have the advanced research capabilities to suppress the ‘pacer-artifact’ and provide diagnostic quality images that are available at the Gill. In collaboration with researchers from UCLA, Gill physicians have combined these imaging capabilities to perform stress perfusion CMR in a patient with a pacemaker.

“In high quality cardiac imaging in all diagnostic arenas (Echo, Nuclear, MRI, & CT), we are able to provide timely, accurate diagnoses that are patient specific and adhere to the Choosing Wisely Campaign www.choosingwisely.org. This reduces unnecessary invasive testing while guiding necessary invasive procedures.”

V.L. SORRELL, MD

In collaboration with UCLA scientists we have the advanced research capabilities to suppress the ‘pacer-artifact’ and provide the physician with diagnostic quality images using wideband imaging sequences (right) to better image patients with cardiac pacemakers or defibrillators.
ECHO at the Forefront of Patient Care

“An ECHO can diagnose heart valve issues,” Dr. Michel Smith, Director of the echocardiography lab says. “Then ECHO can be used to help determine the exact placement of a new valve during a procedure to replace the diseased one. Afterwards, ECHO is used to assess how well that new valve is functioning.”

Dr. Smith and Annette Smith have helped create the region’s most advanced ECHO lab, dedicating literally thousands of hours to training technical and medical staff at this complex tool. According to Annette, who manages the ECHO lab, the Gill Heart Institute has historically been at the forefront of advancements in cardiac imaging.

Gill has participated in early clinical research on nearly all of the new imaging technologies, including color Doppler, spectral Doppler, stress ECHO, trans-esophageal ECHO, and 3D ECHO. Gill’s ECHO Lab has been continuously accredited by the ICAEL since 1999. Only a handful of labs in the country can make that claim. Cardiology fellows at the Gill are encouraged to take the NBE (National Board of Echocardiography) exam, which is notorious for its difficulty. Dr. Smith and one of his colleagues, Dr. Vincent Sorrell, have been awarded the American Society of Echocardiography’s Richard Popp Excellence in Teaching Award, which recognizes the important role of teaching and mentorship in echocardiography. There have been 14 Popp awardees thus far—and Gill claims two of them.

Of course, physicians are only part of the story: high-quality imaging starts with experienced sonographers.

“We have 129 combined years of cardiac sonographer experience,” Annette says proudly. And all Gill sonographers are required to pass the certification exam from the American Registry of Diagnostic Medical Sonographers (ARDMS). “Most hospitals don’t require that, but we want our staff to reflect the highest levels of expertise,” Annette Smith says.

By Laura Dawahare
Cardiovascular Imaging Faculty

**Vincent L. Sorrell, MD**
Professor of Medicine
Anthony N. DeMaria Chair of Cardiovascular Imaging
Director, Cardiovascular Imaging
- Myocarditis
- Cardiac syndrome X and microvascular heart disease
- Mitral valve diseases

**Mikel D. Smith, MD**
Professor of Medicine
Alberto Mazoleni Professor of Cardiology
Director, Echocardiography Laboratory
- Cardiovascular disease
- Echocardiography
- Valvular heart disease

**Steve Leung, MD**
Assistant Professor of Medicine
Associate Director, Advanced Cardiovascular Imaging
Director, Cardiovascular Imaging, Lexington VAMC
- Cardiovascular MRI and CT
- Echocardiography
- Nuclear cardiac imaging

**M. Elizabeth Oates, MD**
Professor and Chair, Radiology
Rosenbaum Endowed Chair of Radiology
- Nuclear cardiology
- Single photon emission computed tomography (SPECT)
- Computed tomography (CT) fusion imaging

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**Moriel Vandsburger, PhD**
Assistant Professor of Physiology
- Cardiac MRI

**Vidya Nadig, MD**
Marianna Zagurovskaya, MD
Annette Smith, RDCS, FASE
Echocardiography Lab Manager
Publications


Wallace EL, Smith MD, and Sorrell VL. Septal perforator size may play a key role in alcohol septal ablation success. Can J Cardiol. 2014 Aug; 30(8):957.e5


Sorrell VL and Hnil, T. Unexpected Cardiac Masses. 2015. JAMA In press
Clinical Trials

ISCHEMIA (NHLBI/NYUSOM) International Study of Comparative Health Effectiveness with Medical and Invasive Approaches
Principal Investigator (site): David Booth, MD

Advanced cardiac MR Imaging to evaluate new cardiovascular MRI sequences in patients who are undergoing a clinically indicated cardiovascular MRI
Principal Investigator (site): Vincent Sorrell, MD

PROMISE (NHLBI) Prospective Multicenter Imaging Study for Evaluation of Chest Pain
Principal Investigator: Vincent Sorrell, MD

Contrast media on the safety, quality and rapidity of computed tomography angiography
Principal Investigator: Michael Winkler, MD

Investigation of situs inversus totalis, its phenotypes, and its relationship to congenital heart disease in the Appalachian population
Principal Investigator: Michael Winkler, MD

Reporting of coronary artery calcification visible on CT scans of the abdomen
Principal Investigator: Michael Winkler, MD

Dyssynchrony in patients with heart failure and congenital heart disease
Principal Investigator: Brandon Fornwalt, MD, PhD

MRI of Myocardial Fibrosis to develop a translational and non-invasive MRI technique for early identification and quantification of myocardial fibrosis based on magnetization transfer (MT) encoded collagen imaging
Principal Investigator: Michael Winkler, MD

Translational magnetization transfer MR Imaging of myocardial fibrosis
Principal Investigator: Moriel Vandsburger, PhD

Cardiovascular Imaging Fellowships

Our advanced cardiovascular imaging (ACI) fellowship program is unique in that there is a close collaboration between cardiology and radiology, offering the opportunity to learn sophisticated tomographic anatomy as well as advanced cardiovascular physiology. Fellows develop in-depth knowledge of cardiac imaging techniques, appropriate applications, and research applications, as part of a multidisciplinary team imaging ventricular mechanics, ischemic heart disease, hypertrophic cardiomyopathy, congenital heart disease, and valvular disease. Currently three fellows are training in advanced CV imaging.

In addition to our advanced cardiac imaging fellowship, an echocardiography fellowship has been approved. This fellowship will blend nicely with the ACI fellowship in that fellows will improve their ECHO skills by participating in the ACI activities and the ACI fellows will have an opportunity to expand their ECHO skills through advanced ECHO fellowship rotations. With the growth of the structural heart program, ECHO (transesophageal, transthoracic and intracardiac) is becoming more widespread in the Cath labs, hybrids labs, EP labs and operating rooms.
Heart Failure, Transplant and Mechanical Circulatory Support

PROVIDING HOPE, RESTORING LIVES
He Art Failure, Transplant and Mechanical Circulatory Support

Providing Hope, Restoring Lives

The UK Transplant Center is at the forefront of clinical technology in heart failure care, heart transplant, and VAD services. We are the only full-service transplant center serving central and eastern Kentucky, and many patients come to us from elsewhere for treatment not offered at hospitals in their home state. Transplant patients benefit from our expert, multidisciplinary approach to evaluation, treatment and management of advanced heart failure. Our integrated Cardiothoracic and Vascular Intensive Care Unit (CTV-ICU) is staffed by a team of skilled caregivers made up of board-certified cardiologists and cardiothoracic surgeons, advanced practice nurses, critical care-certified registered nurses, mechanical circulatory system coordinators, as well as specialty pharmacists, physical, occupational, and speech therapists; nutritionists, and social workers. This team works together to keep patients informed of their options at every stage, and to assist them with managing their long-term care.

The Gill Heart Institute employs the full spectrum of mechanical devices to optimally help a range of patients and conditions. Temporary support systems, such as the Impella CP or the Impella 5, can be placed percutaneously or through an arterial cut-down in patients in critical cardiogenic shock, or who need additional circulatory support. For those with refractory heart failure, the HeartMate II LVAD or the HeartWare LVAD may serve as a bridge to transplant; HeartMate II LVAD is also implanted as destination therapy in certain patients. The CentriMag pump is used in patients needing hemodynamic stabilization. UK was the first health care provider in the state to implant Syncardia's Total Artificial Heart and UK’s transplant program has also performed combined heart-kidney transplants, and it is the only combined heart-lung transplant program in Kentucky.

Dr. Maya Guglin, MD Launches Journal Dedicated to VADs

Dr. Maya Guglin, director of the Mechanical Assisted Circulation (MAC) team at the University of Kentucky’s Gill Heart Institute, has launched The VAD Journal, a publication focused exclusively on mechanical assisted circulation.

“Mechanical assisted circulation is the most rapidly developing area of cardiology, but there is no journal dedicated to papers in this area,” Guglin said. “The growing number of patients with heart failure, the limited pool of donors for cardiac transplantation, and several technological breakthroughs have all made the option of implanting a ventricular assist device as destination therapy more important, and therefore it’s essential to give cardiologists a dedicated forum to share their research and opinions on the topic.

“A ventricular assisted device or “VAD,” is an implantable device that helps the heart do its job when it is too weak or diseased to perform effectively on its own. Originally designed as a means to maintain circulation until a donor heart could be found, VADs are now gaining popularity as a destination therapy for patients with heart failure. The VAD Journal will be an open access publication, meaning that its content is available online without significant financial,
Pulmonary Hypertension Program

The Institute provides the region’s only expertise in the management of pulmonary hypertension. Many of our patients are referred from other area hospitals for treatment. Our program includes a multidisciplinary team of cardiologists, transplant surgeons, pulmonologists, and nurse practitioners who work together to help patients who suffer from this condition. For those who do not respond sufficiently to treatment, referral to our lung transplant specialists is provided.

Led by cardiologist Dr. David C. Booth, the aim of the Gill pulmonary service is to provide compassionate, patient-centered care to individuals with all types of pulmonary hypertension, endeavoring to provide accurate diagnosis, modify and continuously improve care processes, and offer the latest and emerging therapies in pulmonary hypertension.

Alexis Shafii, MD, comes to UK Healthcare from the CT Surgery staff at Baylor University Medical Center at Dallas, Texas. He was named director of the Adult ECMO Program in December 2012 and a UNOS/OPTN primary lung transplant surgeon beginning in May 2013. At the same time, Shafii served as interim surgical director of the Baylor Dallas lung transplantation program. Shafii was also a clinical assistant professor in the Department of Surgery at the Texas A&M College of Medicine.

Though only having just arrived at UK, Shafii noted that Lexington already presented a welcome change of pace from Dallas, particularly in the comparison of downtown rush hour traffic and the absence of residual Gulf Coast hurricanes.

However, a big reason behind his decision to relocate to UK is the clinical and research opportunities that UK Healthcare presents, particularly in his areas of interest: transplant surgery and ECMO.

Shafii completed a three-year fellowship in thoracic surgery at the Cleveland Clinic followed by a two-year advanced cardiac fellowship in heart failure and transplantation. His general surgery residency was at the University of South Florida.

Paul Tessmann, MD, received his medical degree from the University of North Dakota, School of Medicine and Health Service, Grand Forks. He then completed fellowships in Critical Care Surgery at the University of Iowa Hospitals and Clinics, Iowa City and in Thoracic Surgery at the University of Florida, College of Medicine, Gainesville.

Tessmann is board certified by the American Board of Surgery in Surgical Critical care and General Surgery and by the American Board of Thoracic Surgery.

The Heart Failure, Transplant and MCS team welcomes two new CT surgeons
Faculty

David C. Booth, MD  
Endowed Professor of Medicine  
Director, Pulmonary Hypertension Services  
Chief, Cardiology, Lexington VAMS  
• Pulmonary hypertension  
• Acute cardiac disease  
• Heart and lung transplantation

Kenneth Campbell, PhD  
Associate Professor of Physiology  
Director, Biospecimens Core  
• Heart failure  
• Muscle physiology  
• Computer modeling

Maya Guglin, MD  
Professor of Medicine  
Medical Director, Ventricular Assist Devices  
• Heart failure

Navin Rajagopalan, MD  
Associate Professor of Medicine  
Director, Advanced Heart Failure Program  
Medical Director, Cardiac Transplantation  
• Cardiomyopathy  
• Heart failure  
• Heart transplantation  
• Pulmonary hypertension

Paul B. Tessmann, MD, PharmD  
Assistant Professor of Surgery  
• Cardiothoracic Surgery  
• Heart & Lung Transplantation  
• Mechanical Circulatory Support  
• Critical Care & Extracorporeal Life Support

Michael Sekela, MD  
Surgical Director, Cardiac Transplantation  
Professor of Surgery  
• Coronary artery revascularization  
• Transmyocardial revascularization  
• Robotic mitral valve surgery  
• Reoperative/complex adult cardiac surgery/thoracic aneurysm

Alexis Shafi, MD  
Surgical Director, Lung Transplantation  
Associate Professor of Surgery  
• Adult Cardiac Surgery  
• Heart & Lung Transplantation  
• Mechanical Circulatory Support

Paul Anaya, MD  
Associate Professor of Medicine  
• Echocardiography  
• Nuclear cardiology  
• Critical care cardiology
Coordinators

Sarah Branam, RN
VAD Coordinator

Donna Dennis, RN, CCTC
Heart Transplant Coordinator

Candice Falls, APRN, ACNP
Heart Failure/VAD Nurse Practitioner

Tamra Halcomb
Clinical Service Technician, VAD Program

Amanda Hart, RN
VAD Coordinator

Julia Jones
Akhtarekhavari, RN
Mechanical Circulatory Support Manager

Thomas Tribble
Mechanical Circulatory Support Coordinator

Publications


Guglin M. How to increase the utilization of donor hearts? Heart Fail Rev. 2014 May 24 [Epub ahead of print].


Guglin M. Pulmonary hypertension drugs were never properly tested in heart failure. Chest. 2014 Feb; 145(2):420.


Campbell, K. S. Dynamic coupling of regulated binding sites and cycling myosin heads in striated muscle. 2014. J Gen Physiol. 143, 387-399.


Clinical Trials

LAPTOP-HF “Left Atrial Pressure Monitoring to Optimize Heart Failure Therapy Study
Primary Investigator: John C. Gurley, MD

SURTA VI Surgical Replacement and Transcatheter Aortic Valve Implantation. The purpose of this trial is to investigate the safety and efficacy of transcatheter aortic valve implantation (TAVI) in patients with severe, symptomatic Aortic Stenosis (AS) at intermediate surgical risk by randomizing patients to either Surgical Aortic Valve Replacement (SAVR) or TAVI
Primary Investigator: John C. Gurley, MD and Hassan Reda, MD

COMPASS 2: Effects of Combination of Bosentan and Sildenafil Versus Sildenafil Monotherapy on Morbidity and Mortality in Symptomatic Pts. with Pulmonary Arterial Hypertension A Multicenter, Double-Blind, Randomized, Placebo-Controlled Phase IV Study
Primary Investigator: David C. Booth, MD

JTCS-003: A Phase I/II Study to Evaluate the Safety and Efficacy of JVS-100 Administered by Retrograde Delivery to Cohorts of Adults with Ischemic Heart Failure
Primary Investigator: John C. Gurley, MD

Lisinopril or Coreg CR(r) in Reducing Side Effects in Women with Breast Cancer Receiving Trastuzumab
Primary Investigator: Maya Guglin, MD

Sildenafil HF Sildenafil in Heart Failure with Reactive Pulmonary Hypertension
Primary Investigator: Maya Guglin, MD

COMMANDER HF (Janssen) – A Randomized, Double-blind, Event-driven, Multicenter Study Comparing the Efficacy and Safety of Rivaroxaban with Placebo for Reducing the Risk of Death, Myocardial Infarction or Stroke in Subjects with Heart Failure and Significant Coronary Artery Disease Following an Episode of Decompensated Heart Failure
Primary Investigator: Navin Rajagopalan, MD
Cardiovascular Research Center

ADVANCING CARDIOVASCULAR CARE THROUGH RESEARCH
Saha Cardiovascular Research Center

Working in partnership with the Gill Heart Institute is the Dr. Sibu and Becky Saha Cardiovascular Research Center, where physicians and scientists pursue their research interests alongside basic and translational science researchers, and to translate research discoveries to medical therapies more quickly.

Led by director Alan Daugherty, PhD, the Saha CVRC faculty, fellows, staff and students, work on an array of research related to the prevention, diagnosis and treatment of cardiovascular disease. The ranks of Saha CVRC faculty include physicians and scientists drawn primarily from the fields of cardiology, nutrition, endocrinology, physiology and pharmacology. Many faculty hold joint appointments with the Center for Muscle Biology, the Barnstable Brown Diabetes and Obesity Research Center, the Graduate Center for Nutritional Sciences, the College of Medicine, and other areas across the healthcare campus, which exemplifies the university’s commitment to interdisciplinary research.

In the last year, UK renewed its T32 in Clinical Cardiovascular Science and was awarded a P42, R56 and several R01s.

In the most recent fiscal year, the Saha CVRC totaled $7.2 million in NIH funding, $1.26 million in American Heart Association Awards and an additional $300,000 from other sources, making it a powerhouse in the field of cardiovascular research. Dr. Daugherty is editor-in-chief of Arteriosclerosis, Thrombosis, and Vascular Biology, the premier journal in the field. Other Saha CVRC faculty serve on committees and editorial review boards for major scientific journals. Members of the core Saha CVRC faculty have published more than 90 papers in the past year, and also presented at numerous national and international conferences.

Goals of the University of Kentucky Saha Cardiovascular Research Center:

- develop a nationally and internationally recognized center of excellence in cardiovascular research.

- provide an environment for the development and retention of productive faculty.

- facilitate the training of students, including postdoctoral fellows, graduate students, medical students and residents.

- encourage the development of translational and clinical research with funding from federal agencies and industry.
ATVB young investigator award finalists

**Binggang Xiang, PhD**, core faculty of the Saha Cardiovascular Research Center was recently notified as a finalist for the American Heart Association Council on Arteriosclerosis Thrombosis and Vascular Biology Kenneth M. Brinkhous Young Investigator Prize in Thrombosis.

The award recognizes outstanding endeavors by new investigators in fundamental and applied research in thrombosis including the mechanism, detection, treatment, and prevention of thrombotic disorders.

Dr. Xiang presented his abstract entitled “Characterization of a Novel Integrin Binding Protein that is Essential for IIb 3 Outside-in Signaling and Hemostasis” during the ATVB|PVD 2015 Scientific Sessions.

**Prabha Nagareddy, PhD**, was recently notified as a finalist for the American Heart Association Council on Arteriosclerosis, Thrombosis and Vascular Biology Irvine H. Page Young Investigator Research Award. The award is given to new investigators in arteriosclerosis and vascular biology. The award recognizes investigators in the formative years of their careers who have the potential to become future leaders in cardiovascular research.

Dr. Nagareddy presented his abstract entitled “Myelopoiesis Following Myocardial Ischemia (MI) Involves Activation of the Nlrp3 Inflammasome by Neutrophil-Derived S100a8/a9” during the ATVB|PVD 2015 Scientific Sessions. Dr. Nagareddy was also selected as a finalist for the Outstanding Early Career Award, at the Basic Cardiovascular Sciences 2015 Scientific Sessions.

The Cardiovascular Research Day brings together students and scientists to present the latest research developments in cardiovascular health. Scientific topics include lipid metabolism, cardiometabolic diseases, atherosclerosis and thrombosis.

Key note speakers are selected on the basis of providing information beyond the scope of cardiovascular sciences. National Institute of Heart, Lung and Blood (NHLBI) director, Gary Gibbons, MD, will deliver the keynote address for the meeting in the fall of 2015.

Every year the Saha Awards for Cardiovascular Research and Education include a Young Investigator Award and Outstanding Contributions to Cardiovascular Research Award. In 2016 the Gill Award will be added. This prestigious award will recognize notable and life-long achievements in research that have had a sustained impact on cardiovascular biology and/or have changed the standard of cardiovascular clinical care.
Faculty

Alan Daugherty, PhD, DSc
College of Medicine Senior Associate Dean for Research
Gill Foundation Chair in Preventive Cardiology
Professor of Medicine and Physiology
Director, Saha Cardiovascular Research

Dennis C. Bruemmer, MD, PhD
Associate Professor
Internal Medicine – Cardiology

J. Anthony Brandon, PhD
Assistant Professor
Internal Medicine – Cardiology

Frederick C. de Beer, MD
Dean, College of Medicine
Vice President for Clinical Academic Affairs

Marcille de Beer, PhD
Associate Professor
Physiology

Richard Charnigo, PhD
Professor
Biostatistics

Zhenheng Guo, PhD
Associate Professor
Internal Medicine – Endocrinology

Victoria L. King, PhD
Assistant Professor
Internal Medicine – Cardiology

Sangderk Lee, PhD
Assistant Professor
Pharmacology and Nutritional Sciences

Xiang-An Li, PhD
Associate Professor
Pediatrics

Zhenyu Li, MD, PhD
Associate Professor
Internal Medicine – Cardiology

Hong Lu, MD, PhD
Associate Professor
Internal Medicine – Cardiology
Andrew J. Morris, PhD
Professor
Internal Medicine – Cardiology
Pharmacology and Nutritional Sciences

Hongmei Ren, PhD
Assistant Professor
Internal Medicine – Cardiology

Preetha Shridas, PhD
Assistant Professor
Internal Medicine – Cardiology

Venkat Subramanian, PhD
Assistant Professor
Internal Medicine – Cardiology

Ryan Temel, PhD
Assistant Professor
Pharmacology and Nutritional Science

Lisa R. Tannock, MD
Associate Professor
Chief, Division of Endocrinology and Molecular Medicine

Deneys van der Westhuyzen, PhD
Professor
Biochemistry and Nutritional Sciences

Nancy Webb, PhD
Professor
Molecular Pharmacology, Division Director, Nutritional Sciences

Binggang Xiang, PhD
Assistant Professor
Internal Medicine – Cardiology

Faculty pictured elsewhere:
Ahmed Abdel-Latif, MD, PhD
Steve W. Leung, MD
Susan S. Smyth, MD, PhD
Moria Vandsburger, PhD

CARDIOVASCULAR RESEARCH CENTER
Publications


Mallat Z, Daugherty A. AT1 receptor antagonism to reduce aortic expansion in Marfan syndrome: lost in translation or in need of different interpretation? Arterioscler Thromb Vasc Biol. 2015 Feb; 35(2):e10-2


**Temel R**. Hepatic or intestinal ABCG5 and ABCG8 are sufficient to block the development of sitosterolemia. *J Lipid Res*. 2015 Feb;56(2):201-2.


Meyer JM, Ji A, Cai L, **van der Westhuyzen DR**. Minimally oxidized LDL inhibits macrophage selective cholesterol ester uptake and native LDL-induced foam cell formation. *J Lipid Res*. 2014 Jun 2 [Epub ahead of print].


Zhang J, Singh S, Hughes RR, Zhou M, Sunkara M, **Morris AJ**, Thorson JS. A simple


Newly Awarded NIH Grants with Clinical Focus

- **Abdel-Latif, A:** R56 Role of Bioactive Lipids in Stem Cell Mobilization and Homing in Cardiac Ischemia
  
  A mechanism-based understanding of how bioactive lipids mediate BMSPC mobilization and homing following acute ischemic cardiac injury is expected to contribute to a framework whereby novel therapeutic approaches can be developed. Thus, the proposed research is relevant to the part of the NIH’s mission pertaining to developing and applying fundamental knowledge to protect and improve health.

- **Smyth, S and Morris, A:** RO1 Lipid Phosphate Phosphatase 3 As A Novel Atherosclerosis Suppressor
  
  Genetic variation in the gene encoding lipid phosphate phosphatase 3 (LPP3) was recently identified to predict the development of coronary artery disease and acute myocardial infarction. The research will investigate the hypothesis that LPP3 functions as an atherosclerosis suppressor. Completion of the research will define mechanism(s) involved and may implicate bioactive lipid mediators in the development of ischemic heart disease, which will ultimately provide novel and innovative targets to predict prevent and treat coronary artery disease.

- **Vandsburger, M:** R01 Novel MRI Techniques For Imaging Cardiac Fibrosis To Improve Clinical Practice In Patients With Renal Failure
  
  Dr. Vandsburger’s lab concentrates on developing novel MRI techniques to research heart failure, and investigate regeneration at the cellular and molecular level. This research project focuses on using MRI techniques to improve clinical practices in patients with renal failure. Co-investigators are Drs. Harmutt Malluche, MD, Steve Leung, MD, and Richard Charnigo, PhD.

  The emerging link between fibrosis and adverse cardiac events has motivated development of gadolinium contrast agent based diagnostics of cardiac fibrosis that are not suitable for patients with compromised renal function. The proposed work fully validates a completely non-invasive and gadolinium free fibrosis imaging technique and applies this method to the identification of novel blood biomarkers of cardiac fibrosis in chronic kidney disease patients.

- **Gong, M:** R01 Mineralocorticoid Receptor And Abdominal Aortic Aneurysm
  
  AAA is a vascular disease with rising prevalence and a high mortality rate (65% to 85%) related to AAA rupture. Currently, surgery is the only option for treatment of AAA and no drug has been approved for the treatment of this devastating disease. The goals of this application are to elucidate the mechanisms responsible for AAA and thereby identify new therapeutic targets to develop new drugs to treat AAA.

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**Gill Heart Institute Receives $2.85 million for Genetic Study on Heart Attack Risk**

Investigators Susan Smyth, MD, PhD and Andrew Morris, PhD, received a 4 year grant from NHLBI that will support ongoing studies into the genetic cascade of events that give rise to increased risk for cardiovascular disease. A gene called PPAP2B is responsible for a process that confers substantial protection against the development of the disease. “Recent advances in analysis of the human genome have revealed a link between subtle variations that determine how the PPAP2B gene is turned on and increased cardiovascular disease risk,” said Dr. Susan Smyth, director of the Gill Heart Institute and co-PI for the grant. “The question is, ‘what is the process by which this gene either protects — or fails to protect — people from cardiovascular disease?’” Morris also noted that being overweight or obese increases cardiovascular disease risk and the PPAP2B gene may play a role in the process by which increased levels of certain lipids or fats in obese or overweight people promote heart disease. “One implication of this idea is that our studies of the PPAP2B might reveal a connection between diet and inheritable risk factors for heart disease,” he said.

*By Laura Dawahare*
American Heart Association Awards $1.26 million to UK for Cardiovascular Research

Saha CVRC researchers awarded AHA grants in support of their cardiovascular research include:

• A $308,000 grant to Charles Chung, PhD, to study what controls how fast the heart relaxes, which relates to controlling blood pressure. This research will continue to be funded through June 2018.

• A $231,000 grant to Binggang Xiang, PhD, to study how platelets can also regulate inflammatory response and protect against septic shock. This research will continue to be funded through June 2017.

• A $154,000 grant to Sabire Ozcan, PhD, to study insulin secretion from the pancreas, and the cardiovascular complications associated with diabetes. This research will continue to be funded through June 2016.

• A $154,000 grant to Moriel Vandsburger, PhD, to study the emergence of fibrotic tissue, which can accelerate many common chronic diseases including hypertension and diabetes. This research will continue to be funded through June 2016.

• A $154,000 grant to Zhenyu Li, PhD, UK Saha Cardiovascular Research Center, to understand whether plasma natriuretic peptides play a role in the creation of cardiovascular disease. The research will continue to be funded through June 2016.

• A $93,000 grant to Janet Manning, PhD, to study a protein called Rad and how removing this protein protects the heart from long-term consequences of heart attacks. This research will continue to be funded through June 2016.

By Laura Dawahare
Cardiovascular Education

TEACHING TOMORROW'S BEST CARDIOLOGISTS
Teaching Tomorrow’s Best Cardiologists

The Cardiovascular Fellowship Program at the University of Kentucky is an accredited three-year program. Fellows receive superb clinical training in an active academic medical center, the affiliated Veterans Administration Hospital, and a community experience at the UK Good Samaritan Hospital. The program is geared towards assuring an exceptional educational experience that prepares fellows to provide quality medical care in whatever arena they ultimately pursue. The fellowship provides:

- dedicated didactic lecture series covering the core curriculum of cardiovascular diseases.
- specialized lecture series that complement the core curriculum in electrophysiology, EKG interpretation, cardiac imaging, cardiac catheterization, research skills and statistics, and prevention.
- exposure to state-of-the-art patient care
- professionalism in all aspects of patient care, education and research.
- development of outstanding communication skills with patients, their families, and other health care professionals.
- team-based approach within a multifaceted health care system to optimize patient care.
- and, most importantly, how to continue the self-learning process well beyond the completion of their fellowship training.

The University is fortunate to have renewed highly competitive extramural support for trainees in the cardiovascular area: The University of Kentucky T32 Training Program for fellows in Cardiovascular Science.

“I strongly believe that education plays the critical role for success in life. Education enables the best opportunities for personal growth and development, career and professional achievement, income and family security, and success in building satisfying relationships.”

—Jack M. Gill
Cardiovascular Fellows

Neil Aboul-Hosn, DO
Andrew Boerkercher, DO
Dennis Bruemmer, MD, PhD
Andrew Burchett, MD
Rafael Cavalcanti, MD
Christian Deutsch, MD
Bennet George, MD
Vedant Gupta, MD
Patrick Hurley, DO
Sun Moon Kim, MD
Andrew Kolodziej, MD
Nathan Kusterer, MD
Laura MacDonald, MD
Kevin Parrot, MD
Mohamed Metawee, MD
Jean Touchan, MD
Cardiovascular Fellows (continued)

Interventional Cardiovascular Fellows

Christopher Adams, MD
Damien Marycz, MD
Martin Rains, MD
Madhan Shanmugasundaram, MD

Electrophysiology Fellow

Kelly Waespe, MD

Vascular/Endovascular Surgery Fellow

Noah Scherrer, MD – PGY7

not pictured

Oluwafunmi Awonuga – PGY 6
Vascular/Endovascular Surgery Fellow
UK’s Division of Cardiothoracic Surgery designed its integrated, six-year training program to provide the resident in-depth experience in many aspects of cardiac and thoracic care, which are most relevant to CT surgery. The ACGME-accredited program, directed by Sibu Saha, MD, MBA, allows physicians to begin their CT surgery training immediately after graduating from medical school rather than the traditional five years of general surgery.

Having six years in a comprehensive curriculum allows surgical trainees the time necessary to learn many of the skill sets presently being neglected, such as cutting edge catheter-based techniques, cardiac electrophysiology, thoracic oncology, interventional bronchoscopy, benign foregut surgery, and vascular surgery techniques, to name a few. UK’s program is divided into three introductory years, where time is allotted for rotations in general surgery, radiology, pulmonary medicine, endoscopy, trauma, cardiology, and cardiac imaging. The training culminates with more intensive, hands-on operative experience in adult cardiac and thoracic surgery, and transplantation.

For more information about our program, contact Residency Program Coordinator, Olivia Turner at olivia.turner@uky.edu or call (859) 218-4840.
Select Fellow Publications


Brochure produced by:
Paula Heron, PhD, editor
Laura Dawahare, contributing author
Jason Britt, Marketing
Lee Thomas Photography
Additional Photography by
David McRae, PA-C and Karen Michul
The art of heart care