ARCHIVE

UK HealthCare | UK College of Medicine

DEPARTMENT OF SURGERY | 2021 ANNUAL REPORT

CELEBRATING THE PAST, **EMBRACING THE FUTURE**

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ON THE COVER

The UK Department of Surgery has gained significant ground in advancing its research mission in recent years, with researchers like Hiroshi Saito, PhD, leading the way. For well over a decade, Saito and his team have received continuous funding through National Institutes of Health R01 grants. Saito's current team includes undergraduate research assistant Alyson Galvan-Lara (far left in photo); Meagan Kingren, PhD candidate; and Jian Pu, MD, PhD. Read more about Saito's work on Page 54.

UK HealthCare

MESSAGE FROM THE CHAIR

CELEBRATING THE PAST, **EMBRACING THE FUTURE**

In July 1961, Dr. Ben Eiseman, sitting president of the Society of University Surgeons, arrived in Lexington from the University of Colorado to become the inaugural chair of the University of Kentucky Department of Surgery. The opportunity to start a surgery department in "a bucolic place with no school, a small farmhouse, and a cornfield" intrigued Dr. Eiseman. Shortly after arriving, he performed UK Chandler Hospital's first operation — a thoracotomy — to great fanfare.

July 2021 marks the UK Department of Surgery's diamond anniversary and my second full year as its Chair. Over six decades, the Department of Surgery has flourished in its mission to serve the needs of the Commonwealth. Building upon the visions and skills of a faculty that has featured such academic giants as Drs. Frank C. Spencer, Ben Rush, Richard Schwartz and Ward Griffen among many others, the department has made significant contributions to national academic and scientific advances across surgical specialties.

Today, 11 divisions, 87 faculty, 40 advanced practice providers, 80 residents and fellows and 115 staff comprise the UK Department of Surgery. As an academic surgical department, we manage an annual case volume of 12,471 operations and nearly 60,000 outpatient visits*.

We measure success against seven foundational pillars. Clinical excellence, surgical education and research remain traditional standards, but in healthcare's constantly changing environment, we also consider leadership development, diversity and inclusion, innovation, and global outreach as equally vital facets of our work.

These foundational pillars influence the initiatives upon which UK Surgery advances patient care and scientific discovery. For example:

- In 2022, UK residents and faculty will collaborate with colleagues in Lusaka, Zambia as part of the American College of Surgeons' Operation Giving Back, which will enhance leadership skills, problem solving, innovation and empathy. (Page 21)

- In partnership with the UK College of Engineering, Surgery is launching an embedded scholars program in which biomedical engineering faculty will shadow our surgeons to investigate innovations to surgical procedures. (Page 15)

- Two new research divisions — the Division of Research (Page 52) and the Division of Healthcare Outcomes and Optimal Patient Services (HOOPS) (Page 40) — will streamline our clinical, basic science, translational and health outcomes studies to achieve top 10 ranking in National Institutes of Health funding within seven years.

In this report, we celebrate the remarkable achievements of our faculty, residents, students and staff over the last few years. Though still young, UK Surgery has built a national identity in academic medicine alongside our peers and colleagues. Our future shines bright.

William B. Inabnet III, MD, MHA, FACS
The Johnston-Wright Endowed Professor and Chair of Surgery
Surgeon-in-Chief, UK HealthCare

*According to the 2019 report on surgical activity from the Kentucky Medical Services Foundation.

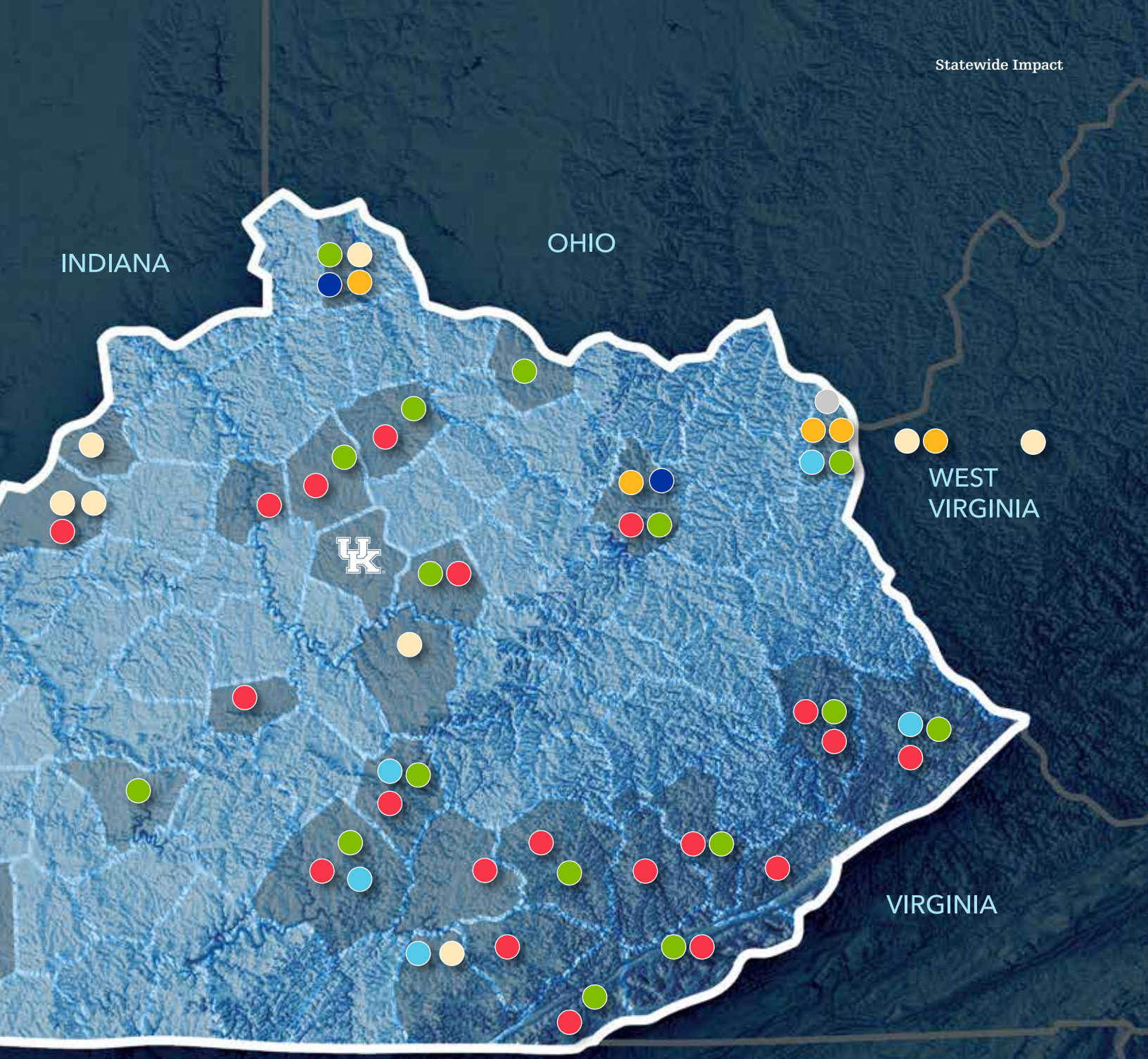
STATEWIDE IMPACT

UK SURGERY REACHES ACROSS KENTUCKY WITH **ADVANCED SURGICAL CARE, EDUCATION AND LEADERSHIP**

The UK Department of Surgery has embraced its mission to provide the Commonwealth of Kentucky and its adjoining regions access to advanced surgical procedures, training and research.

UK Surgery faculty are active in our UK HealthCare affiliate networks: The Gill Heart & Vascular Institute; the nationally recognized NCI-designated Markey Cancer Center; the UK Transplant Center; and the groundbreaking Joint Pediatric Heart Program between UK HealthCare's Kentucky Children's Hospital and Cincinnati Children's Hospital Medical Center.

These networks enable UK Surgery faculty to reach beyond our home base of Lexington, Ky., to achieve our primary goal — to train the next generation of surgeons to provide complex surgical care to the people of the Commonwealth of Kentucky and the critically underserved in Appalachia.



- Markey Cancer Center Affiliate Network
- Markey Cancer Center Research Network
- Organ Failure and Transplant Network and Outreach Relationships
- Gill Heart & Vascular Institute Affiliate Network and Outreach Relationships
- Medical School Regional Campus
- Joint Pediatric Heart Program
- Graduate Medical Education Surgical Program
- Joint Venture Partnership

Current as of June 2021

OUR HISTORY

A 60-YEAR TRADITION OF SERVICE AND **SURGICAL EXCELLENCE**

Both alarming and discouraging, medical care in Kentucky early in the 20th century was dire. One of every three Kentuckians examined for military service during World War II was medically unfit for duty. In 1949, there were more than 5,000 unattended births, and Kentucky ranked near the bottom in physician-to-patient ratio. It was estimated that 1,400 additional doctors were needed in the state.

Numerous reports, issued by independent sources, a cadre of UK's most respected professors and the Legislative Research Commission, consistently lamented: A medical center at UK would result in better health care for Kentuckians. Mounting concerns swelled as it was projected the Commonwealth would be 2,000 physicians below the national average by 1965 if immediate efforts were not taken to create another medical school in the state.

In June 1954, the UK Board of Trustees committed to fulfilling the University's original charter to create a medical college and associated medical center once funds became available. Former Gov. Albert B. Chandler promised during his 1955 gubernatorial re-election campaign that if elected, he would build and appropriate the necessary funds for a medical college. This was his top priority. He won the election and fulfilled his promise to the people of Kentucky.

In a true demonstration of bipartisanship, Gov. Bert T. Combs, Chandler's successor, gave full support to the completion and operation of the medical center. A year later, the Kentucky General Assembly designated $5 million to construct a medical science building and related science buildings at UK.

In May 1956, the UK Board of Trustees resolved to establish a complete academic medical center. The original complex was completed at a cost of $27.8 million. State funds provided nearly $17.1 million and approximately $10.7 million in federal money was used.

William R. Willard, MD, was selected to serve two roles — founding vice president of the UK Medical Center and the UK College of Medicine's first dean. He was charged with turning a cornfield into a modern medical complex. Willard recruited Ben Eiseman, MD, PhD, who at the time was a professor of surgery at the University of Colorado, to establish a new "from scratch" surgery department and serve as its inaugural chair. Eiseman's appointment as professor and founding chair commenced in 1961, and the UK Department of Surgery was established. During his tenure at UK, Eiseman recruited a remarkable group of future academic leaders, many of whom went on to become chairs of their own departments or hold other high-level positions.

More so than any one individual, it was the local medical community as a whole that long championed for a medical college at its land-grant, public university. The Fayette County Medical Society and the Kentucky Medical Foundation were paramount in lobbying for its development. Devoted local physicians gained legislative and public support for the college, knowing that it would provide increased health care for all Kentuckians. A steering committee of civic leaders and physicians, appointed by Dean Willard, was formed to push for the development of a state-funded medical center in Lexington. The aspirations of those founding fathers and mothers lives on today as local providers and alumni serve as volunteer faculty, donors, advocates and champions.

The milestones that follow are by no means comprehensive. They are glimpses of moments in time in which the UK Department of Surgery progressed into its current existence. With a celebrated history and strong foundation, today's UK Department of Surgery continues to build momentum and emerge into a new era of unprecedented growth.

Completed in 1962, UK Albert B. Chandler Hospital was named in honor of the former Kentucky governor, who had been a steadfast proponent for an academic medical center at the state's land-grant, public university.

1961
The University of Kentucky College of Medicine establishes the Department of Surgery. Seven days later, Ben Eiseman, MD, performs the university's first surgical procedure – a thoracotomy.

1961
The Department of Surgery research program commences following appointment of a research fellow and receipt of a grant from the Kentucky Chapter of the American Cancer Society.

1977
Ward Griffen, MD, PhD, department chair from 1967 to 1984, refines the Roux-En-Y Gastric Bypass (RYGB) procedure, which becomes a procedural standard.

1991
Michael Sekela, MD, performs the university's first heart transplant and lung transplant at UK Albert B. Chandler Hospital.

1991
Medical Mission Ecuador, a nonprofit medical organization created to provide medical facilities, surgery and personnel to underserved areas, is founded by Henry Vasconez, MD, UK Surgery, a native of Ambato, Ecuador.

1986
Roy Patchell, MD, UK Surgery, heads the first of three landmark studies that establish the standards of care for metastatic cancer to the brain and spine.

1960 1970 1980 1990

1962
Residents and medical students begin clinical rotations. Department of Surgery clinical faculty accept their first patients at UK.

1964
Bruce Lucas, MD, performs Kentucky's first kidney transplant, which initiates the university's solid organ transplant services.

1984
The American Board of Surgery appoints Ward Griffen, MD, PhD, as its executive director.

Department of Surgery Chairs

Ben Eiseman, MD, 1961–1967

Ward O. Griffen, MD, PhD, 1967–1984

Byron Young, MD, 1985–1996

Robert Mentzer Jr., MD, FACS, 1997–2006

Joseph "Jay" B. Zwischenberger, MD, FACS, 2007–2019

William B. Inabnet III, MD, MHA, FACS, 2019–present

2008
UK HealthCare surgeons perform Kentucky's first "donation after cardiac death" double lung transplant at UK Albert B. Chandler Hospital.

2010
UK Chandler Hospital becomes the only Level 1 Trauma Center in the Commonwealth certified for both pediatric and adult trauma. UK is one of only 20 centers in the United States to attain both certifications.

2013
The "Zwisch Scale," introduced by Jay Zwischenberger, MD, department chair from 2007-2019, is published in *The Journal of Surgical Education* and is incorporated into the SIMPL OR app.

2004
The first robotic surgical procedure in Kentucky is performed at the UK Chandler Medical Center, using the new da Vinci Surgical System.

NCI Cancer Center
A Cancer Center Designated by the National Cancer Institute

2013
The University of Kentucky Markey Cancer Center becomes a National Cancer Institute-Designated Cancer Center. It is Kentucky's only NCI center and one of a limited number across the nation.

2000 2010 2020

1998
The UK Center for Minimally Invasive Surgery opens and Adrian Park, MD, serves as founding director.

1998
The Association for Surgical Education names UK surgeon Richard Schwartz, MD, as its president.

HealthCare Kentucky Children's Hospital
Cincinnati Children's changing the outcome together

2016
UK HealthCare Kentucky Children's Hospital and Cincinnati Children's Hospital Medical Center announce the Joint Pediatric Heart Surgery Program, creating the first "one program, two sites" model in the United States.

2008
The FDA approves the double lumen catheter invented by Joseph B. Zwischenberger, MD, FACS, and Dongfang Wang, MD, PhD, which changes extracorporeal membrane oxygenation (ECMO) standard of care.

UK HealthCare Transplant Center

2020
UK Transplant Center performs its 5,000th solid organ transplant and records more than 3,000 kidney transplants.

2020
William B. Inabnet III, MD, MHA, FACS, performs Kentucky's first trans-oral endoscopic thyroidectomy.

2021
UK performs its 500th heart transplant.

FOUNDATIONAL PILLARS

OUR PILLARS TO SUCCESS

As the UK Department of Surgery enters into its seventh decade, it reaffirms its commitment to education, research and patient care through establishment of its foundational pillars.

Our pillars serve as guiding principles for our forward-thinking strategic initiatives. We know where we've been and where we are today. These pillars identify a purposeful trajectory and serve as tenets by which we shall measure our collective, continued successes.

Each pillar represents a domain in which we know great opportunity exists. These pillars do not simply stand alone, insular in form or function. Each offers distinct areas in which we aspire to achieve new heights. Together, our pillars construct a master framework to define priorities and embolden our united accomplishments as a department.

Philanthropic support is vital to our continued success and serves as a key accelerator for pillar-based initiatives. To learn more about giving opportunities associated with our pillars, contact **Lindsey Clem**, director of philanthropy at **jlclem4@uky.edu** or make a gift using the QR code.

1

Optimal Patient Care: Deliver unparalleled, patient-centered clinical care

2

Education: Inspire the next generation of surgeons toward advanced skill and utmost knowledge

3

Research: Yield new knowledge and advance scientific discovery

5

Leadership & Professional Development: Advocate, at local and national levels, to develop impactful surgeon leaders

4

Innovation: Pursue collaborative partnerships to advance scientific discovery

6

Diversity, Equity & Inclusion: Foster an environment that removes barriers and promotes unbiased access for all

7

Global Surgery: Provide humanitarian surgical services to underserved communities the world over

PILLARS

OPTIMAL PATIENT CARE

Deliver unparalleled, patient-centered clinical care

ECMO TEAM PLAYS VITAL ROLE **FOR COVID PATIENTS**

At the peak of the coronavirus pandemic, UK HealthCare was treating approximately 100 COVID patients at once while simultaneously caring for the critically ill and injured generally admitted to the region's only Level 1 adult and pediatric trauma center. Ventilators were in high demand at nearly every hospital in the country. But, for the gravely ill, extracorporeal membrane oxygenation, or ECMO, was among their last options for survival. Commonly considered a "bridge" to transplantation, ECMO granted COVID patients' cardiovascular and respiratory systems a reprieve; an opportunity to rest and recover.

The mechanics of ECMO are complex. It pumps blood through a device that adds oxygen and then pumps it back into the patient's body, performing the function of the heart and lungs. The specialized treatment relies on a dozen or more healthcare professionals to administer the extreme intervention. The most effective way to offer the therapy is through a single, specialized hub that can transport and care for patients from outlying facilities. UK HealthCare serves as such a hub. Some community hospitals have ECMO but not the infrastructure to support patients' length-of-stay — a month or more. Others do not have the technology.

Michael Sekela, MD, chief of Cardiothoracic Surgery, first conceived the idea of ECMO transport to support every possible scenario. This transport model requires space and equipment to accommodate a highly skilled team of EMTs, paramedics, critical care nurses and perfusionists. For patients at hospitals without ECMO service, a surgeon joins the transport team to connect the patient to ECMO equipment before transport to UK — the only center in Kentucky or within a three-hour drive offering Adult ECMO transport.

"We were at war against an invisible enemy," said Rajasekhar Malyala, MD, assistant professor of Surgery and cardiothoracic surgeon. "We had to do our part to save lives and sometimes, our fight made all the difference. When we see success stories, it is a boost of morale for everyone."'

During Kentucky's COVID surge, UK HealthCare utilized ECMO on dozens of patients, direct admits or transfers from hospitals across the region. Beyond those in need of ECMO, UK HealthCare accepted hundreds of critically ill patients, and staff worked tirelessly to ensure all patients received adequate care during the global pandemic.

Left: UK HealthCare is an ECMO hub, serving Central Kentucky and the surrounding region.

Right: Charles Campbell, DO, (seated, in front) shown here with his General Surgery residency colleagues, was selected by the Veterans Health Administration to complete a quality improvement and patient safety fellowship at Lexington VA Medical Center.

SHAPING THE FUTURE **OF PATIENT SAFETY**

Charles "Chas" Campbell, DO, a general surgery resident at the University of Kentucky, was selected by the Veterans Health Administration to complete its 2020–2021 Quality Improvement and Patient Safety (QIPS) fellowship. Each year, approximately 80 individuals are selected as quality improvement and patient safety fellows, who serve as chief residents at eight VA medical centers.

The fellowship provides intensive training in clinical aspects of patient safety, health services research methodology and leadership. Designed to develop the next generation of leaders in patient safety, the fellowship focuses on research rooted in lean quality improvement methods and qualitative methods.

Campbell has long emphasized quality improvement and patient safety as critical to healthcare practice. He designed a QIPS curriculum, delivered via a three-lecture series, and deployed a survey to assess the department's patient safety climate to identify areas for improvement. Additionally, he evaluated and developed a standardized operating procedure for operating room setup to allow for decreased variation as well as consistent and efficient patient care.

Campbell completed his undergraduate education at UK and received his Doctor of Osteopathic Medicine degree from the University of Pikeville.

"Dr. Campbell did an outstanding job, implementing a quality and safety curriculum in surgery, discussing operating room culture as it relates to high reliability, and standardizing operating room preparation for laparoscopic cholecystectomy. His work is gaining national attention throughout the Veterans Health Administration and the American College of Surgeons."

Andrew Harris, **MD**,
Section Chief of Urology and Program Director, VA Patient Safety Fellowship, Lexington VA Medical Center

PILLARS

EDUCATION

Inspire the next generation of surgeons toward advanced skill and utmost knowledge

60 Residents

17 Preliminary Residents

7 Fellows

HIGHLIGHTS

Master Surgeon Educators

Sandra Beck, MD, and Jitesh Patel, MD, were inducted as associate members into the American College of Surgeons (ACS) Academy of Master Surgeon Educators in September 2020. The Academy recognizes surgeon educators who have devoted their careers to surgical education. Beck and Patel join a prestigious group of internationally recognized educators.

Beck, professor and division chief of Colon and Rectal Surgery and Vice Chair of Education, has been program director of the UK General Surgery Residency since 2016. Patel, a professor in the division of Colon and Rectal Surgery, serves as program director of the UK Colon and Rectal Surgery Fellowship and associate program director of the General Surgery Residency Program.

Cultivating competency

Melissa Newcomb, MD, was named assistant dean for assessment and evaluation, a new position in the UK Graduate Medical Education (GME) office, in 2020. She collaborates with UK's residency program committees to develop processes and measures to document medical residents' progress from first-year learners to competent providers. Newcomb is an associate professor of Surgery, associate program director of the General Surgery Residency Program, and a member of the General, Endocrine and Metabolic Surgery faculty.

Expanding our training opportunities

UK was approved in May 2020 to expand its class of General Surgery residents from seven to eight and to establish a new Colon and Rectal Surgery (CRS) Fellowship program. The Accreditation Council of Graduate Medical Education (ACGME) granted the approvals. In addition to the Colon and Rectal Surgery fellowship, the Department of Surgery offers fellowships in Cardiothoracic Surgery, Hand Surgery, Surgical Critical Care and Vascular Surgery.

The UK Department of Surgery regards its surgical education program among its highest priorities. Our faculty are actively involved in all areas of academic practice, including clinical care, education and research. Our residents and fellows receive training at an academic medical center and health system that provides patient care on par — in terms of both volume and complexity — with the nation's leading academic hospitals.

Left: The American College of Surgeons (ACS) Academy of Master Surgeon Educators inducted Sandra Beck, MD, and Jitesh Patel, MD, as new associate members.

Right: UK is one of more than 200 programs enrolled in a five-year national study to improve wellness and reduce burnout during surgical training.

PLANTING SEEDS OF **WELL-BEING FOR OUR TRAINEES**

To improve wellness and reduce burnout during surgical training, the UK Department of Surgery established a General Surgery Resident Wellness Program. Modeled on pioneering wellness programs nationwide, it addresses residents' mental, physical, professional and social well-being.

The program parallels a national movement by surgical residency programs to improve well-being during training. A national study showed nearly 39 percent of residents experience burnout and/or mistreatment. As a result of this study, a second trial was started to examine well-being and develop wellness strategies. UK is one of more than 200 programs nationally enrolled in the five-year study.

Implementing wellness efforts was a challenge in 2020, yet with the added stress of COVID-19, the program proved itself vital. Special initiatives included delivery of 3,000-plus healthy dinners to UK residents on the COVID frontlines; home delivery of Kats Kare Baskets to sick residents; and virtual social gatherings.

David Worhunsky, MD, and **Sandra Beck, MD**, drive resident wellness initiatives for surgical trainees as co-chairs of the General Surgery Wellness Committee. Worhunsky also serves as the UK Department of Surgery Chief Wellness Officer.

"Surgical residents work in high-stress, high-acuity environments. Providing a well-being curriculum will hopefully decrease resident burnout while providing a lifelong skillset that had been missing in surgical education."

DAVID WORHUNSKY, MD,
Department of Surgery
Chief Wellness Officer

Make a gift to support our residents

To support these initiatives, donations may be made to the Surgery Resident Wellness Fund, by calling **859-555-1212** or making a gift using the QR code.

PILLARS

RESEARCH

Yield new knowledge and advance scientific discovery

$2 million
Clinical Studies Contract Income

37
Active Industry-Sponsored Clinical Studies

$6.7 million
Nationally Peer-Reviewed Awarded Grants

9
Ongoing NIH/Government-Funded Research Projects

4
Institutional-Supported Pilot Projects

EVERS ELECTED TO THE **NATIONAL ACADEMY OF MEDICINE**

Mark Evers, MD, professor of Surgery and director of the UK Markey Cancer Center, has been elected to the National Academy of Medicine (NAM).

Election to the Academy is considered one of the highest honors in the fields of health and medicine, and recognizes individuals who have demonstrated outstanding professional achievement and commitment to service.

New members are elected by current members through a process that acknowledges individuals who have made major contributions to the advancement of the medical sciences, health care and public health. A diversity of talent among NAM's membership is assured by its Articles of Organization, which stipulate that at least one-quarter of the membership is selected from fields outside the health professions — such as law, engineering, social sciences and the humanities.

Evers is one of 100 new U.S. and international members elected by their peers. According to the Academy, Evers was elected for his expertise on intestinal hormones and hormonal arcades in oncogenesis. His seminal insights defined the role of gut hormones on normal physiology and metabolism, pioneering innovative understanding of neuroendocrine cell biology and the role of neurohormonal pathways in the development and progression of neuroendocrine tumors.

Left: Mark Evers, MD, is one of 100 new U.S. and international members elected to the National Academy of Medicine – considered one of the highest honors in the field of health and medicine.

Right: Dan Davenport (left), PhD, chief of the new Division of Healthcare Outcomes and Optimal Patient Services (HOOPS) and Marlene Starr (right), PhD, chief of the new Division of Research, are two of Surgery's newest leadership team members.

HIGHLIGHTS

Zwischenberger-Rounsavall Fund for Innovation in Surgical Research and Education

The first recipients of the Zwischenberger-Rounsavall Fund for Innovation in Surgical Research and Education are **Samuel C. Tyagi, MD**, (above left) a vascular surgeon and researcher, the primary recipient, and **Bud Sauer, MD**, (above right) a sixth-year plastic surgery resident, a secondary recipient.

The Zwisch-Rounsavall Fund aims to foster a culture of original thinking in surgical research and surgery education. Joseph Zwischenberger, MD, professor and former chair of Surgery at UK, helped establish the fund to provide initial support for innovative research projects.

Tyagi's proposal, "Ketamine to Improve Pain Control Following Complex Aortic Surgery Repair," examines the feasibility of ketamine as an alternative to opioids for pain control in the post-operative patient. Sauer's proposal involved the design of a suturing skills curriculum for medical students.

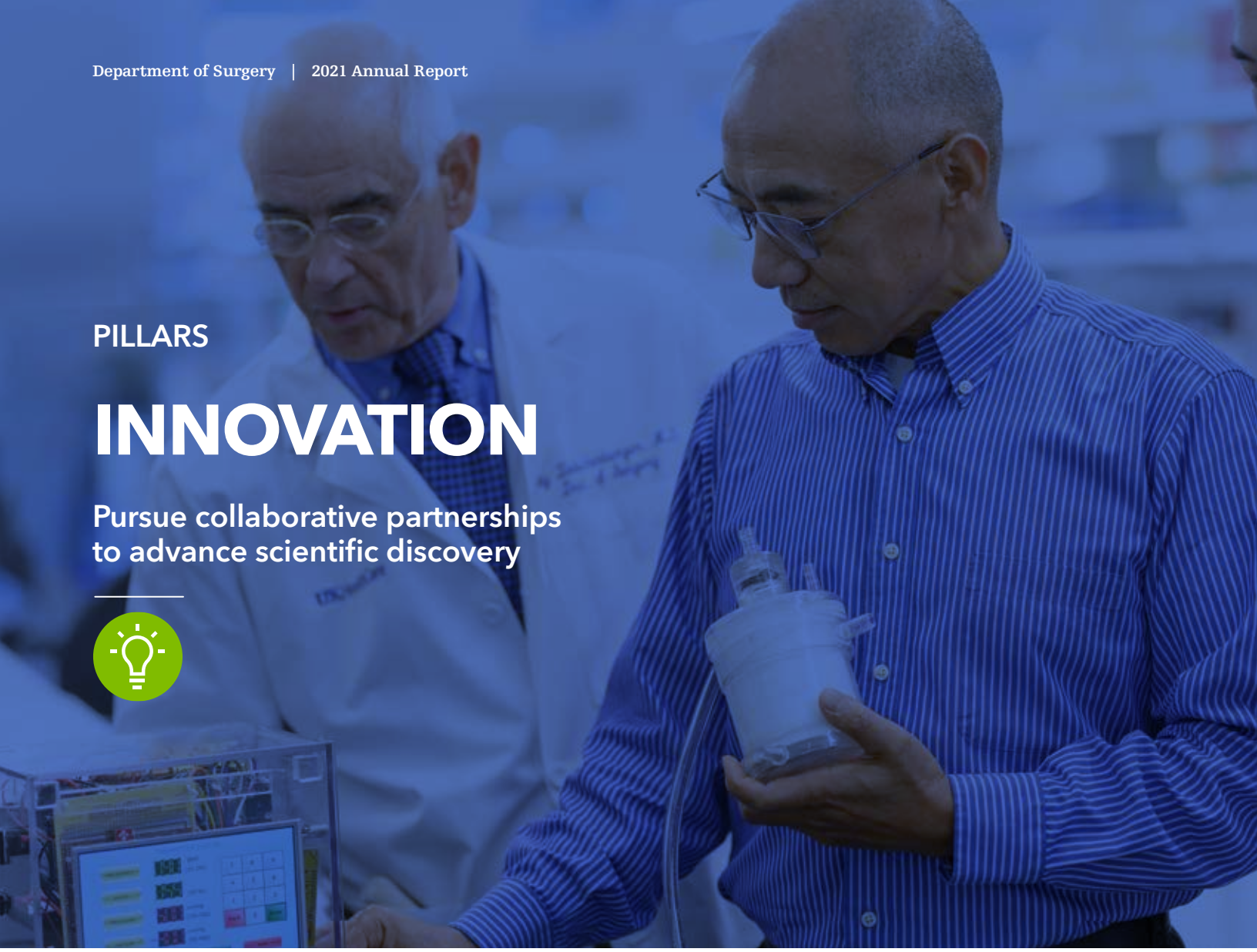
NEW DIVISIONS ADVANCE **COMMITMENT TO RESEARCH**

Two new divisions are strengthening the UK Department of Surgery's commitment to advancing research and improving outcomes. Marlene Starr, PhD, leads the Division of Research, and Dan Davenport, PhD, heads the Division of Healthcare Outcomes and Optimal Patient Services (HOOPS).

Surgical research at UK ranked 21st in 2019 and 27th in the nation in 2020. A dedicated research division supports streamlining processes and communication, eliminating redundancies of effort, and centralizing activities as appropriate. Since fiscal year 2016, the department has experienced a nearly 70 percent increase in research awards. In fiscal year 2020, the department was awarded $6.7 million in research funding compared with fiscal year 2016's $2.6 million — a 124.8 percent increase. The Department of Surgery endeavors to achieve top 10 National Institutes of Health funding status within the next seven years.

Formation of HOOPS builds on well-established departmental practices of measuring outcomes and optimizing patient care. Davenport leads a core group of research nurses and statisticians who track patient outcomes and submit data to state and national registries. Creating a formal division supports the department's efforts to recruit top researchers; bring best practices into data management; and provide faculty and leadership with the best outcomes research.

The new divisions empower the department to position itself even more firmly as a national research leader.



PILLARS

INNOVATION

Pursue collaborative partnerships to advance scientific discovery

NEW TECHNOLOGY HOLDS PROMISE FOR COMBAT SURVIVAL

The U.S. Department of Defense (DoD) awarded Dongfang Wang, MD, PhD, and his team $3.9 million in research funding for development of a simple lung support system. The device will aid in emergency transport of soldiers with acute respiratory distress syndrome — from combat field to medical center.

The project intends to develop a one-piece, compact Paracorporeal Pump Integrated Artificial Lung (pPIAL). The device will directly attach to the patient's body, reducing accidental dislodgement, tube kinks or obstructions, or increased clotting — all risks of current multi-piece devices that have long tubing connections. The new technology utilizes intellectual property developed by Wang and outlined in one of his existing patents. The compact pPIAL has great potential to decrease modern war mortality.

Wang, professor of Surgery and director of UK's Artificial Organ Laboratory, is an internationally recognized expert in heart and lung assist devices. "We are developing innovative medical devices for challenging medical problems to address the unmet needs of patients," Wang said.

Wang has made significant contributions toward simplifying extracorporeal membrane oxygenation (ECMO). He and Joseph Zwischenberger, MD, professor and former chair of Surgery, jointly hold five U.S. patents of which two have been successfully commercialized. Their patented Avalon Elite® double lumen cannula for total respiratory support has significantly impacted the clinical practice of venovenous (VV) ECMO for severe lung failure treatment, benefiting thousands of patients.

Left: Dongfang Wang, MD, PhD, (holding device) and his team were awarded a $3.9 million U.S. Department of Defense grant to develop a one-piece compact lung support system.

Right: Guigen Zhang, PhD, is helping forge a new partnership between the departments of Biomedical Engineering and Surgery to leverage the advantages of UK's transdisciplinary environment to undertake translational activities.

COLLABORATION SEEKS **TO INFORM & INSPIRE**

The convergence of Engineering and Medicine at the University of Kentucky dates back decades and has yielded a multitude of successful collaborative efforts. Leaders from departments of Biomedical Engineering (BME) and Surgery are determined to formally establish a collaborative partnership to gain ground and codify current and future opportunities, particularly grant funding.

"We have the minds, the tools and the long history of mentorship it takes to achieve new heights of discovery," said William B. Inabnet III, MD, MHA, professor and chair of Surgery. "With Biomedical Engineering and Surgery working in an integrated, purposeful fashion, we are leveraging talent from both departments. This will form a pipeline of innovation opportunities for students, faculty, residents and fellows."

Guigen Zhang, PhD, professor and chair of Biomedical Engineering, added, "UK is one of a handful of public universities in the country with a diverse group of colleges on a single, contiguous campus."

"We are setting the stage to achieve a deeper level of integrative engineering. UK is uniquely positioned to gain leadership in this arena, given the many strengths and unique attributes that exist on our campus."

GUIGEN ZHANG, PHD,
Professor and Chair of Biomedical Engineering

Researchers can leverage the advantages of UK's transdisciplinary environment to undertake translational activities. In an integrated setting of Engineering and Medicine, students and trainees hone their skills and learn the ropes through immersion in a crucial biomedical translational loop from bedside to bench to bedside.

Injectable microtissues, "smart" drug carriers, biomaterials for hernia repair and post-surgical adhesiogenesis are among BME faculty's broad spectrum of areas of expertise.

Initial components of the collaboration include: the newly established fast-track BME Clinical Immersive master's program; opportunities to shadow faculty from alternate department; an innovators speakers series; and entrepreneurship courses in everything from business plan development to maneuvering the commercialization process.

PILLARS

LEADERSHIP & PROFESSIONAL DEVELOPMENT

Advocate, at local and national levels, to develop impactful surgeon leaders

TRANSFORMING THE FIELD OF **ORGAN TRANSPLANT**

For years, associate professor of Surgery and transplant surgeon Malay Shah, MD, and colleagues across the nation have taken a powerful stance to improve and address disparities in the organ procurement process.

In November 2020, their leadership in the arenas of advocacy and research paid off when the Centers for Medicare and Medicaid Services (CMS) adopted national standards to assess the performance of Organ Procurement Organizations (OPOs).

CMS's decision is a major development in the field of transplant surgery in the United States.

"The adoption of these national standards that Dr. Shah and his colleagues advocated for could be the most significant change in the field of transplantation in the last 15 years," said Roberto Gedaly, MD, division chief of Transplantation.

The regulations hold OPOs accountable for their work. In the past, performance and organ donation metrics have been unverifiable and inconsistent, creating discrepancies in estimating potential organ donors. The new standards align with findings published by Shah and other researchers who have presented scientific arguments supporting reform.

Research has shown that standardized, verifiable metrics support OPOs with the greatest opportunity to increase donation rates and could increase the number of organs available for transplant.

"I have no doubt that in 10 years, the transplant community will look at this decision as the day our entire field changed in a positive manner," Shah said. "I look at this day in which many years of hard work and perseverance in both research and advocacy efforts finally paid off."

The regulations — slated to take effect in 2022 — include a three-tier classification system that evaluates OPO performance based on two measures: donation rate and transplant rate.

Left: Malay Shah, MD, has long advocated for national standards to assess the performance of Organ Procurement Organizations.

Right: J. Scott Roth, MD, professor of surgery and division chief of General, Endocrine, and Metabolic Surgery, was selected as the first recipient of the Surgical Leadership Development Award.

CHAMPIONING FACULTY LEADERSHIP THROUGH **NEW AWARDS, RECOGNITION**

In the constantly changing environment of health care, it is vital for physicians and providers to understand and participate in legislation, regulation and the reasons behind administrative decision-making. Recognizing this certainty, the Chair's Office of the UK Department of Surgery launched the Surgical Leadership Development Award in early 2020.

The award provides funding for a faculty member to participate in a leadership program covering issues of health policy, management and administrative challenges of academic or not-for-profit healthcare organizations. The Department of Surgery recognizes the importance of encouraging faculty to develop and enhance their leadership skills as stakeholders in academic healthcare systems.

J. Scott Roth, MD, professor of Surgery and chief of the Division of General, Endocrine, and Metabolic Surgery, was selected as the first award recipient. He plans to attend the highly regarded Leadership Development program for Physicians in Academic Health Centers, sponsored by the Harvard T.H. Chan School of Public Health.

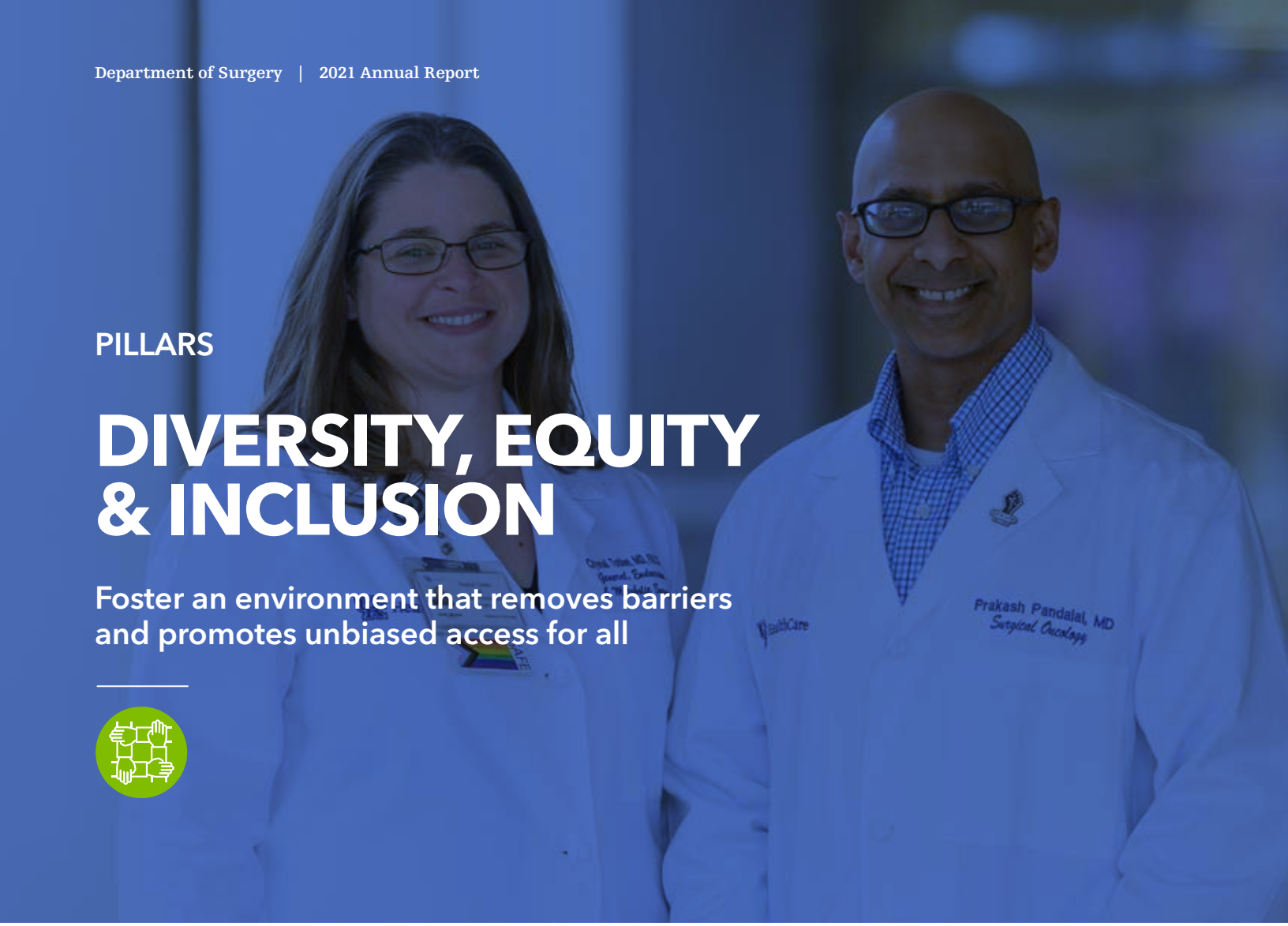
"In a complex healthcare environment, an understanding of local, national and global factors impacting healthcare delivery is paramount. Harvard's Leadership Development program provides a framework of knowledge which can be refined to meet the needs of our population and further enhance care throughout the Commonwealth of Kentucky," Roth said.

In addition to promoting participation in leadership conferences and professional development seminars, the department also encourages faculty to seek opportunities for partnerships and to pursue advanced degrees in business and public health. Numerous faculty have pursued advanced degrees such as Master's of Business Administration or Master's of Public Health over the years.

HIGHLIGHTS

Inabnet named Surgeon-in-Chief

William B. Inabnet III, MD, MHA, FACS, chair of the UK Department of Surgery, was appointed surgeon-in-chief of UK HealthCare in summer 2020. In this role, Inabnet works to enhance the medical education experience for learners pursuing surgery-related careers. He also serves as a liaison between leadership and the surgery team to develop a strategy to advance clinical care.



PILLARS

DIVERSITY, EQUITY & INCLUSION

Foster an environment that removes barriers and promotes unbiased access for all

DEI TASK FORCE PROVIDES **A COMPASS FOR GROWTH**

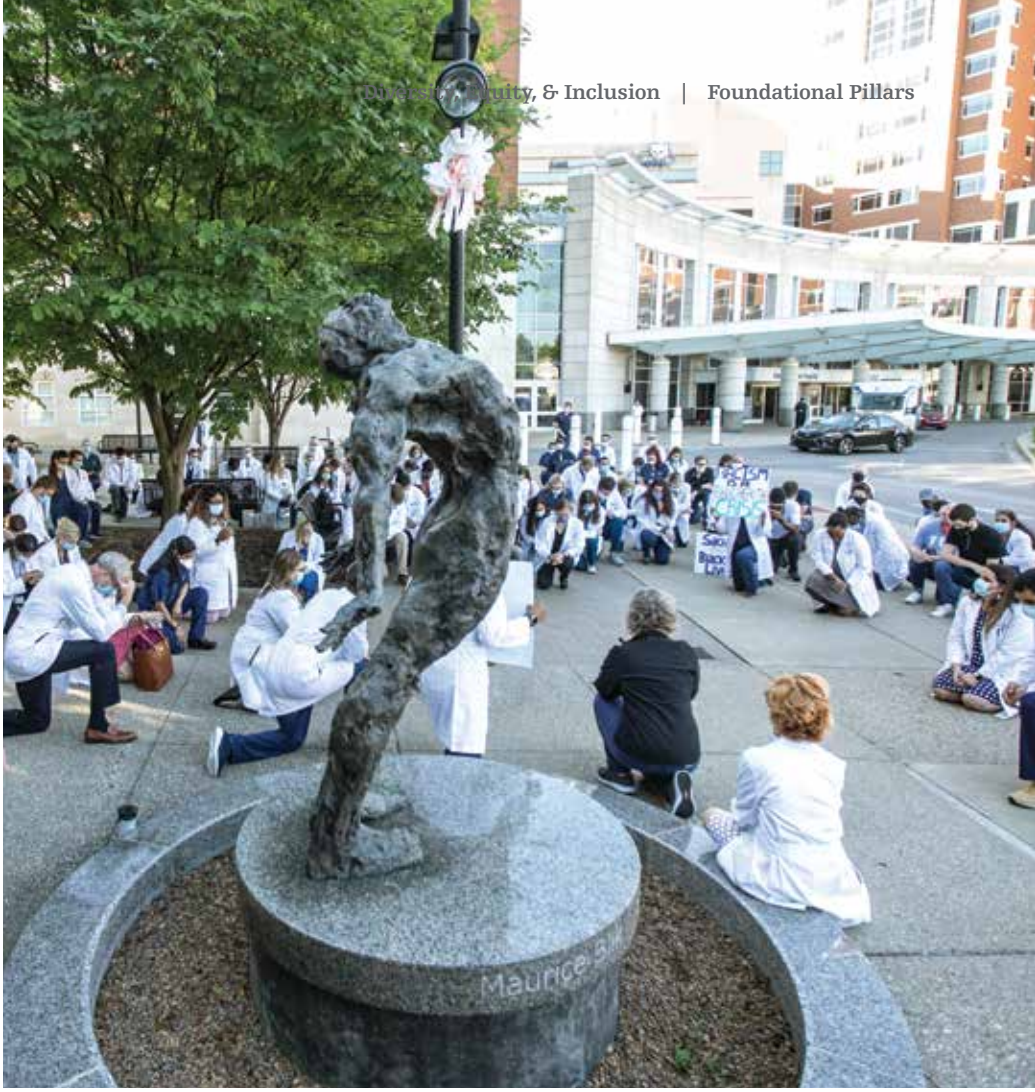
Crystal Totten, MD, and Prakash Pandalai, MD, were appointed co-chairs of the UK Department of Surgery's newly created Diversity, Equity and Inclusion (DEI) Task Force. Working to research, recommend and implement best practices, the task force will implement DEI strategies within the department.

Totten, a general surgeon, and Pandalai, a surgical oncologist, have recruited a core leadership team of department faculty and advanced practice providers. The group's mission is to create and promote "an inclusive culture where diversity is embraced and valued."

"When we have focused, honest conversations around DEI, it helps open our eyes to the unique perspectives and experiences of all our colleagues," Totten said. "As we implement successful inclusivity strategies, we hope to build stronger relationships, improve communication, and achieve greater empathy with faculty, residents and our patients."

Insights shared openly increase engagement and welcome a greater variety of individuals to the meeting room, research lab or the operating room, Totten added.

"We openly acknowledge, embrace and value the strength of our diverse team, " Pandalai said. "Our DEI curriculum is intended to enhance our own self-awareness, foster dialogue and give our residents, faculty and staff concrete tools to address inequality, inequity and disrespect when encountered. By intentionally seeking out diversity in all its aspects, our goal is to lead with respect and role model how equity and equality can come together for the shared purpose of caring for our sick patients. We are enthusiastic believers in our ability to effect positive change."



Left: Crystal Totten, MD, general surgeon and Prakash Pandalai, MD, surgical oncologist, co-chair the UK Department of Surgery's Diversity, Equity and Inclusion Task Force.

Right: More than 100 individuals attended the "White Coats for Black Lives" demonstration, hosted by the Department of Surgery.

A DEMONSTRATION OF SOLIDARITY, **A TIME FOR ACTION**

"It is important that we take this challenging set of current events, learn from them, and develop a positive set of actions."

WILLIAM B. INABNET III, MD, MHA, FACS
Professor and Chair of Surgery

The UK Department of Surgery hosted a "White Coats for Black Lives" demonstration in June 2020 outside UK Albert B. Chandler Hospital. More than 100 people attended the event, led by residents and faculty who serve on the Surgery Wellness Committee.

Demonstrators knelt in silence for 8 minutes and 46 seconds to remember George Floyd, a black man in Minnesota who died at the hands of police, with the observance representing the length of time a white officer held his knee on Floyd's neck. The event mirrored similar demonstrations across the country protesting racial injustice and police brutality. The protest was also a show of solidarity with people of color who have been disproportionately impacted by COVID-19 and other diseases because of healthcare inequities.

Before the event, the Department of Surgery sponsored a special Surgery Grand Rounds featuring Stephanie White, MD, associate dean for diversity and inclusion in the UK College of Medicine. White spoke on issues impacting academic medical centers, including the need to recruit racially diverse medical faculty and residents and to increase health disparities research. David Worhunsky, MD, chief wellness officer for Surgery, followed with a discussion of race relations and social justice.

PILLARS

GLOBAL SURGERY

Provide humanitarian surgical services to underserved communities the world over

VASCONEZ AWARDED FULBRIGHT SCHOLARSHIP TO **ADVANCE ECUADOR OUTREACH**

Henry Vasconez, MD, MBA, was selected as a recipient of an award from the Fulbright Foreign Scholarship Board for the 2021-22 academic year.

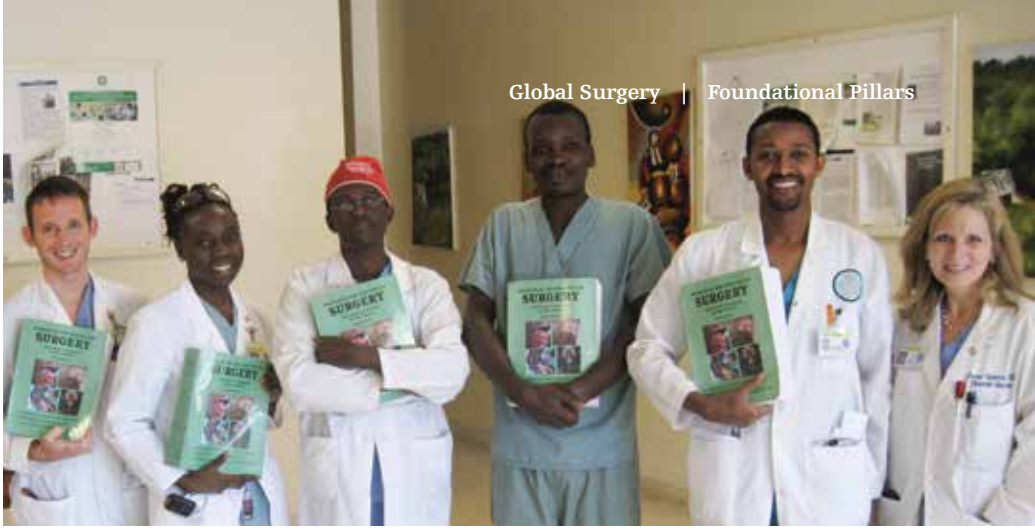
Vasconez, professor of Plastic and Reconstructive Surgery at the University of Kentucky, will use the grant in collaboration with the host institution, The Universidad de San Francisco de Quito (USFQ), to give lectures and workshops to students, residents, and faculty and utilize telehealth for surgical demonstrations. Through online teaching programs, Vasconez will further strengthen the long-standing relationship between UK and USFQ.

In addition to his adult and pediatric plastic surgery practice at UK HealthCare, Vasconez is a co-founder of Medical Missions Ecuador, a medical outreach mission that has been treating the medical needs of impoverished families for nearly 30 years.

Funding will also be used to support Vasconez's ongoing research into congenital anomalies, particularly the incidence of microtia, prevalent in the Andean region of Ecuador.

This year marks the 75th anniversary of the Fulbright Program. More than 400,000 "Fulbrighters" have participated in the program devoted to increasing mutual understanding between the people of the United States and people of other countries. Fulbright alumni include 60 Nobel Laureates, 88 Pulitzer Prize winners, 75 MacArthur Fellows, and thousands of leaders across the private, public and non-profit sectors.

Vasconez was previously appointed to serve on the Fulbright Specialist Roster to share his expertise with global partners and colleagues through the U.S. Department of State's Bureau of Educational and Cultural Affairs and World Learning.



Left: Henry Vasconez, MD, MBA, has participated in medical outreach missions to Ecuador for more than 30 years and was recently awarded a Fulbright Award.

Right: Carol Spears, MD, (far right), general surgeon and alumna of the UK Department of Surgery, welcomes the first class of General Surgery residents to Tenwek Hospital in Bomet, Kenya at the progam's inception in 2007 (Photo courtesy of Samaritan's Purse).

EMBRACING CELEBRATED & NEW PARTNERSHIPS

A commitment to Global Surgery has been a long-standing core value of the UK Department of Surgery. Formal adoption in 2020 of "Global Surgery" as one of the department's foundational "pillars" has invigorated and reaffirmed our faculty's dedication to providing humanitarian surgical services to underserved communities. These populations include people the world over — from Kentuckians to individuals in far-off countries.

As the department continues to formalize programs and outreach efforts, here are but a few notable initiatives:

- **Operation Giving Back**: UK recently joined a consortium of university departments of surgery through the American College of Surgeons Operation Giving Back program to work with a teaching hospital in Lusaka, Zambia. The program forges supportive partnerships between the low-resource hospital and 13 participating departments of surgery to provide consistent, month-to-month surgical services.

- **Richard W. Furman, MD, FACS**: Dr. Furman, an alumnus of UK General Surgery and Cardiothoracic Surgery residency, was honored with the International Surgical Volunteerism Award at the 2019 Clinical Congress of the American College of Surgeons. Dr. Furman and his brother, the late Lowell Furman, MD, founded World Medical Mission (WMM) in 1977. For over four decades, WMM, a branch of Samaritan's Purse International Relief, has provided mission-based medical outreach programs throughout the world. The program annually sends 600 plus medical professionals to nearly every continent.

- **From Kenya to United Arab Emirates**: After 13 years, Carol Spears, MD, FACS, UK Department of Surgery alumna, stepped down from her practice at Tenwek Hospital in Kenya to pursue general surgery at Kanad Hospital in the United Arab Emirates. While in Kenya, Spears helped establish a general surgery residency with the Pan-African Academy of Christian Surgeons (PAACS) to train surgeons for practice in Africa. Tenwek, the largest WMM mission hospital in Africa, has welcomed several UK Surgery department residents, faculty and alumni as mission volunteers.

- **Surgery on Sunday**: A longtime dream of retired Lexington plastic surgeon and UK College of Medicine alumnus Andrew Moore II, MD, the program was established in 2005 in Lexington, Ky. One Sunday a month, volunteer physicians, nurses and numerous other professionals provide essential outpatient procedures at no cost to income-eligible individuals. These patients are either uninsured or under-insured, and do not qualify for federal or state assistance.

HIGHLIGHTS

Bringing smiles to children's faces

James Liau, MD, associate professor of Surgery, and plastic and pediatric craniofacial surgeon, participated in his annual mission trips to Quito, Ecuador, for the Global Smile Foundation and to Guatemala with the Lexington-based Children of the Americas Foundation. Joining him in Ecuador was plastic surgery residency alumnus, Wes Edmunds, MD, and, in Guatemala, former chief resident Ashley Boustany, MD. The Global Smile Foundation provides repair of cleft lips, cleft palates, outpatient surgery, and dental procedures exclusively for children of low-income families.

Alumni commit to global practice

Peter Stafford, MD, an alumnus of the UK's General Surgery Residency Program, signed on with Samaritan's Purse to practice two years at Hopital Baptiste Biblique in Togo, West Africa. In January 2021, he moved to Nyankunde Hospital in the Democratic Republic of the Congo.

Another alumnus of UK's General Surgery Residency Program, Joshua Meyer, MD, signed on with the International Mission Board for a long-term global surgery practice.

DIVISIONS

OUR DIVISIONS **PROMOTE VITALITY**

In response to the impressive growth the department has experienced over the last decade, the UK Department of Surgery launched its seven foundational pillars and, concurrently, expanded its divisional structure. This transition emboldens the department to continue its progress and position itself as an even greater national leader.

The department's new organizational model established divisions consisting of five to 15 surgeons. This empowers smaller, independent units to build their own identity, to work with their own resources, to better facilitate decision-making and to allow greater flexibility to flourish.

In addition to the creation of new clinical surgery divisions, the Division of Research and the Division of Healthcare Outcomes and Optimal Patient Services (HOOPS) were also established. The elevation to division status ensures these critical functions remain at the forefront of our priorities, streamlines activities and resources, and accelerates our efforts toward achieving top 10 National Institutes of Health funding status in the near future.

The divisions of the UK Department of Surgery are:

- **Acute Care Surgery, Trauma and Surgical Critical Care**
- **Cardiothoracic Surgery**
- **Colon and Rectal Surgery**
- **General, Endocrine, and Metabolic Surgery (GEMS)**
- **Healthcare Outcomes and Optimal Patient Services (HOOPS)**
- **Pediatric Surgery**
- **Plastic and Reconstructive Surgery**
- **Research**
- **Surgical Oncology**
- **Transplantation**
- **Vascular and Endovascular Surgery**

DIVISIONS

ACUTE CARE SURGERY, TRAUMA AND SURGICAL CRITICAL CARE

As the region's only Level 1 trauma center serving Central, Eastern and Southern Kentucky, UK HealthCare provides trauma, critical care and emergency surgery for an estimated population of more than 1.2 million people from communities both urban and rural. UK HealthCare's American College of Surgeons-verified trauma program is guided by faculty and staff who continue to advance and enhance a comprehensive system of trauma care (specialty surgical services, research, and prevention and education programs) in the Commonwealth through mutual partnerships with first responders and regional hospitals.

2,065
2019 Surgical Cases

2,034
2020 Surgical Cases*

2,634
2019 Clinic Visits

2,372
2020 Clinic Visits*

7
2020 Industry-sponsored, Federal, and NIH grants

$451,960
2020 Contract Income

*Decreased numbers attributed to COVID-19 pandemic and its impact on healthcare, globally.

Andrew Bernard, MD, is helping to redefine the role of trauma centers as places to not only treat but also reduce incidences of injury.

A PARTNERSHIP TO **PREVENT FUTURE VIOLENCE**

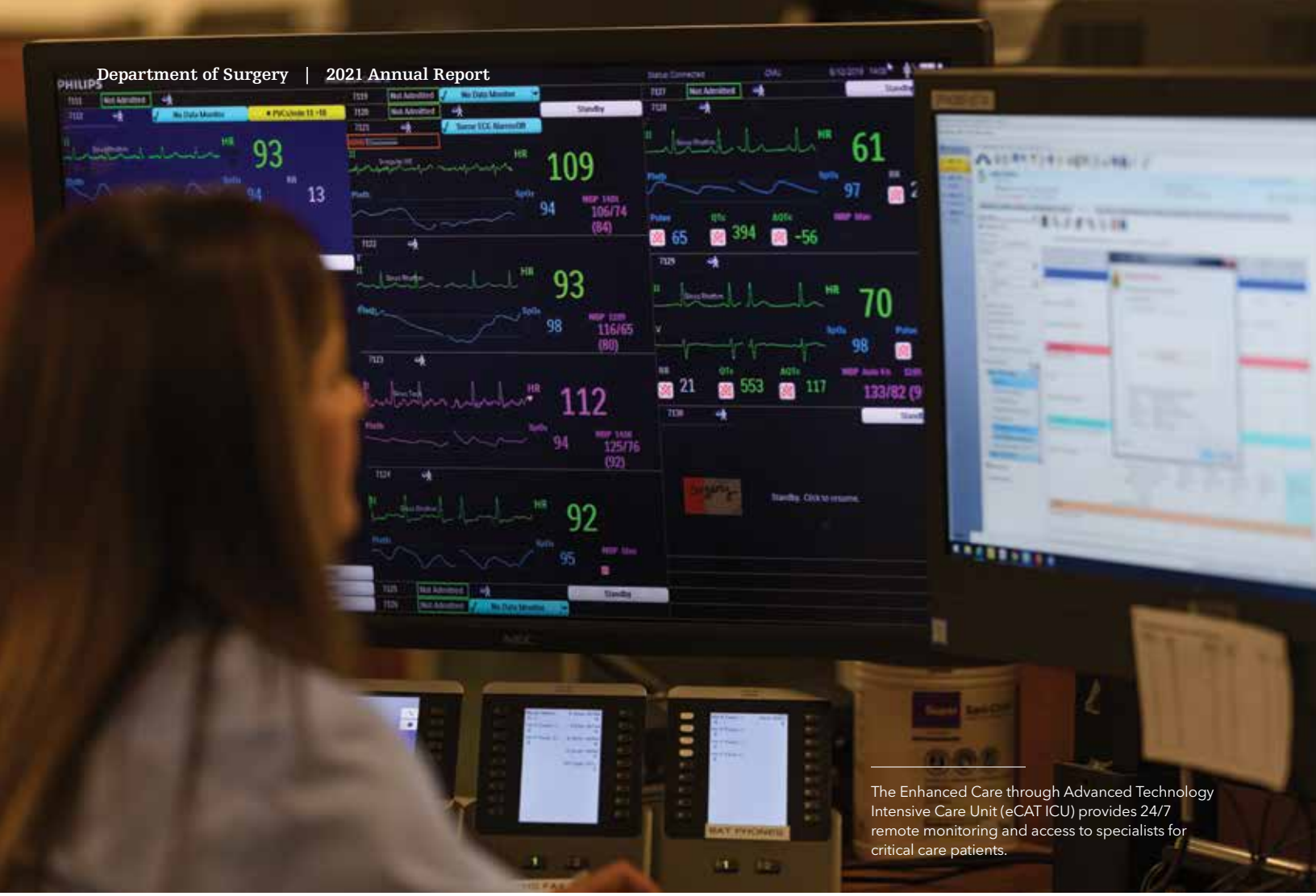
The UK HealthCare Trauma Program is engaged in an innovative partnership with ONE Lexington, an initiative to reduce local firearm violence. "Safety Net" is key to ONE Lexington as it serves as a hospital-based violence intervention program for the initiative.

Safety Net connects UK HealthCare patients from Fayette County, who are 12 to 26 and have experienced firearm violence, with community support and resources to help them be safe and successful. The city's ONE Lexington initiative was created in 2017 to coordinate community efforts addressing violent crime. Hospital-based intervention programs reflect a broader change in the approach to trauma care.

"Until the last several years, trauma care focused on physical well-being," said Andrew Bernard, MD, medical director of UK HealthCare's trauma program and chief of the Division of Acute Care Surgery. "We stopped the bleeding, got the bones set up straight, sent the patient off to rehab, and then high-fived ourselves … But the military campaigns in Iraq and Afghanistan have taught us that, after physical injury, we need to address the emotional, psychological and behavioral health as well." Bernard said Safety Net illustrates the transformation and progression in the role of the trauma center — not only to care for the injured but to help reduce incidence of injury. "We've also become much more mindful of the fact that patients get injured because of social factors," he said.

Adult and pediatric trauma services staff identify patients who fit the Safety Net's criteria. A team member discusses Safety Net and offers to connect the patient with a ONE Lexington outreach worker.

"This isn't a doctor or nurse telling them what to do. It is someone who understands the life they are living who is a peer. They can establish a relationship built on trust."



The Enhanced Care through Advanced Technology Intensive Care Unit (eCAT ICU) provides 24/7 remote monitoring and access to specialists for critical care patients.

ACUTE CARE SURGEONS PLAY **VITAL ROLE IN NEW VIRTUAL ICU**

Acute care and trauma surgeons at UK HealthCare are a vital part of a new virtual intensive care unit. The Enhanced Care through Advanced Technology Intensive Care Unit (eCAT ICU) provides 24/7 remote monitoring and access to specialists for critical care patients. Even more so, the centralized virtual care model allows providers to detect risk of patient deterioration. This translates to earlier interventions and improved care outcomes.

The eCAT ICU is an important hub of UK's telehealth services. It offers an added layer of support for bedside teams through audio-visual technology, predictive analytics and data visualization. Artificial intelligence synthesizes patient data and delivers actionable insights to support proactive care. These tools make it possible to detect changes in a patient's status earlier and in real time, contributing to better outcomes. Surgeons on the team have managed resuscitation of patients, guided staff on ventilation requirements, and provided extra oversight.

The eICU telehealth hub — the only facility of its kind in Kentucky — is located a few miles from the main medical campus. It launched in early 2020, right before onset of the COVID-19 pandemic. The eCAT team has played a critical role in the care of COVID patients, reducing the number of exposures for onsite staff and connecting isolated patients and their loved ones virtually.

The multidisciplinary team of surgeons, pulmonologists, critical care anesthesiologists and expertly trained nurses care for patients at UK Albert B. Chandler and UK Good Samaritan hospitals. UK HealthCare is working to develop eICU partnerships with other hospitals across Kentucky to support care for high-risk patients.

"The goal is to extend this to surrounding hospitals and not only manage their critical care patients but also be able to identify patients who might need critical care here at UK," said Anthony J. Bottiggi, MD, medical director of the eCAT ICU and associate professor of Surgery.

ACUTE CARE SURGERY, TRAUMA AND SURGICAL CRITICAL CARE FACULTY

Andrew C. Bernard, MD, FACS
Division Chief

Henrik O. Berdel, MD, FACS

Anthony James Bottiggi, MD, FACS

Jessica Kathleen Reynolds, MD, FACS
Fellowship Director, Critical Care Surgery

Oscar I. Moreno-Ponte, MD, FACS

Brian K. Tucker, DO

NEW FACULTY 2019-2021

Meir B. L. Meerkov, MD

Sarah Kolnik, MD, MPH
Instructor

Zachary D. Warriner, MD, FACS

Tyler Koestner, MD

HIGHLIGHTS

Enhanced trauma training

Division of Acute Care Surgery, Trauma and Surgical Critical Care faculty have developed a unique educational component to the standard "Blue" (trauma) rotation for medical students and residents. Each weekday afternoon, learners participate in an educational conference with faculty presenting on topics unique to trauma and acute care. The curriculum — designed for the continuing education of students and residents — essentially serves as an acute care surgery course. "We take the education of our learners very seriously," said Andrew Bernard, MD, medical director of the trauma program and chief of the Division of Acute Care Surgery, Trauma and Surgical Critical Care.

While UK provides residents unique opportunities to gain exposure and expertise in situations of both urban and rural trauma care, Bernard notes that the curriculum provides additional education beyond trainees' on-the-job training and experience. "The trauma rotation adds up to something more because of this curriculum."

DIVISIONS

CARDIOTHORACIC SURGERY

Highly skilled, distinguished surgeons comprise the faculty of the Division of Cardiothoracic Surgery. Using state-of-the-art operating and hybrid suites, robotics, and minimally invasive techniques, faculty offer expertise in all areas of cardiac and thoracic surgery. Cardiothoracic surgeons help propel UK HealthCare's multidisciplinary programs, including the Transplant Center, the Markey Cancer Center and the Gill Heart & Vascular Institute. They provide exceptional care at UK Albert B. Chandler Hospital — the only hospital in the region that performs artificial heart and multiple-organ transplants.

1,525
2019 Adult Surgical Cases

1,272
2020 Adult Surgical Cases*

5,313
2019 Adult Clinic Visits

4,537
2020 Adult Clinic Visits*

100
2019 Pediatric Surgical Cases

66
2020 Pediatric Surgical Cases*

103
2019 Pediatric Clinic Visits

104
2020 Pediatric Clinic Visits

10
2020 Industry-sponsored, Federal, and NIH grants

$437,514
2020 Contract Income

*Decreased numbers attributed to COVID-19 pandemic and its impact on healthcare, globally.

Tim Mullett, MD, MBA, currently serves as chair of the American College of Surgeons Commission on Cancer, which is dedicated to improving survival and quality of life for cancer patients in the U.S.

SETTING THE NATIONAL STANDARD FOR CANCER CARE

In October 2020, the Commission on Cancer (CoC) virtually installed its new chair, University of Kentucky cardiothoracic surgeon and UK Markey Cancer Affiliate Network medical director Tim Mullett, MD, MBA. For physicians, patient care professionals and staff of Kentucky's cancer programs, the name "Tim Mullett" resonates. He has worked with hospitals and medical centers in the Commonwealth for decades to ensure quality care for cancer patients.

"The Commission on Cancer is an excellent organization and it's a privilege to be able to serve as chair," Mullett said. "It is well known that Kentucky leads the nation in incidence of several forms of cancer. I look forward to carrying the flag for our Commonwealth and representing some of the problems that are amplified in Kentucky cancer care, particularly rural surgery and care, and lung and colon cancer screening implementation."

The CoC, established by the American College of Surgeons in 1922, is a consortium of professional organizations dedicated to improving survival and quality of life for cancer patients.

The program establishes accreditation standards to ensure quality, multidisciplinary and comprehensive cancer care delivery in healthcare settings. There are approximately 1,500 accredited programs representing all 50 states.

Mullett previously served as CoC State Chair connecting and collaborating with Kentucky's Cancer Liaison Physicians, a grassroots outreach network of physician volunteers. During this time, nine programs received their initial CoC accreditation, the quality standard required for membership in the UK Markey Cancer Center Affiliate Network. These standards have helped Kentucky hospitals of all sizes achieve better, more consistent cancer treatment standards. One real advantage of accreditation is it can be applied to programs with less than 100 cases or programs with 5,000 cases — size doesn't matter.

Mullett has been a member of the cardiothoracic surgery faculty since 1996.

UK leads ReCePI study enrollment

The University of Kentucky is one of about 20 clinical sites in the country — and the top-enrolling site — in a Phase 3 trial designed to evaluate the efficacy and safety of INTERCEPT red blood cells (RBCs) in patients requiring transfusion for acute blood loss during complex cardiac surgery.

The ReCePI study is a randomized, double-blinded, controlled, parallel group, non-inferiority study in which a total of 600 patients are being randomized to receive transfusion support with INTERCEPT-treated or with conventional RBCs. **Michael Sekela, MD, FACS**, chief of the Division of Cardiothoracic Surgery, is principal investigator of the ReCePI study at UK.

The Cerus Corp. is developing the INTERCEPT Blood System for RBCs to reduce the risk of transfusion-transmitted pathogens, as well as decrease the potential for adverse transfusion reactions.

Award recognizes Saha for his mentorship

The Academy of Medical Educators named **Sibu Saha, MD, MBA**, professor in the Division of Cardiothoracic Surgery, as a recipient of its annual Excellence in Medical Education Award in the area of mentorship on Feb. 5, 2021.

The award recognizes Saha's significant contributions to educational programs in the UK College of Medicine. Throughout his career as a cardiac surgeon, Saha has mentored residents and fellows in Cardiothoracic Surgery. In addition to serving as former division chief, Saha was program director of the fellowship program in cardiothoracic surgery and the I-6 residency program. He continues to mentor residents in clinical skills and research.

The Academy of Clinical Educators is an interdisciplinary community of dedicated faculty who collaborate to strengthen their own teaching and to promote educational excellence throughout the medical community. Membership in the Academy recognizes highly accomplished educational leaders, who serve as educational resources to colleagues and UK College of Medicine leadership.

CARDIOTHORACIC SURGERY FACULTY

Michael Sekela, MD, FACS
Division Chief

Suresh Keshavamurthy, MBBS, FACS

Tessa London, MD

Rajasekhar Malyala, MD

Shari Meyerson, MD, M.Ed., FACS
Section Head of Thoracic Surgery; Director of I-6 CT Residency and CT Fellowship

Jordan Miller, DO

Timothy Wm. Mullett, MD, MBA, FACS
Medical Director, Markey Cancer Center Network Development

Sibu Saha, MD, MBA, FACS

William J. Wallen, MD, PhD

Joseph. B. Zwischenberger, MD, FACS

NEW FACULTY 2019-2020

Carl L. Backer, MD, FACS
Section Chief, Pediatric Cardiothoracic Surgery

Clinton Morgan, MD, PhD

Hassan Reda, MD, FACS

Mansi M. Shah, MD
Assistant Medical Student Clerkship Director

DIVISIONS

COLON & RECTAL SURGERY

One of the Southeast's largest academic programs, the Division of Colon and Rectal Surgery is a clinical leader in all aspects of colon and rectal surgery, serving a medically complex patient population. Our physicians, trained at preeminent fellowship programs, specialize in minimally invasive techniques using advanced laparoscopy and robotic surgery. Faculty are experts in lower endoscopy screening procedures, endoscopic removal of complicated polyps, and trans-anal minimally invasive surgery, eliminating the need for surgical intervention. Colon and Rectal Surgery provides comprehensive, multidisciplinary care with our colleagues across UK HealthCare, whether treating inflammatory bowel disease with Gastroenterology, or working with Gynecologic Oncology to help patients with recurrent pelvic cancers, or with any clinical department that has need of our specialized services.

1,200
2019 Surgical Cases

1,218
2020 Surgical Cases

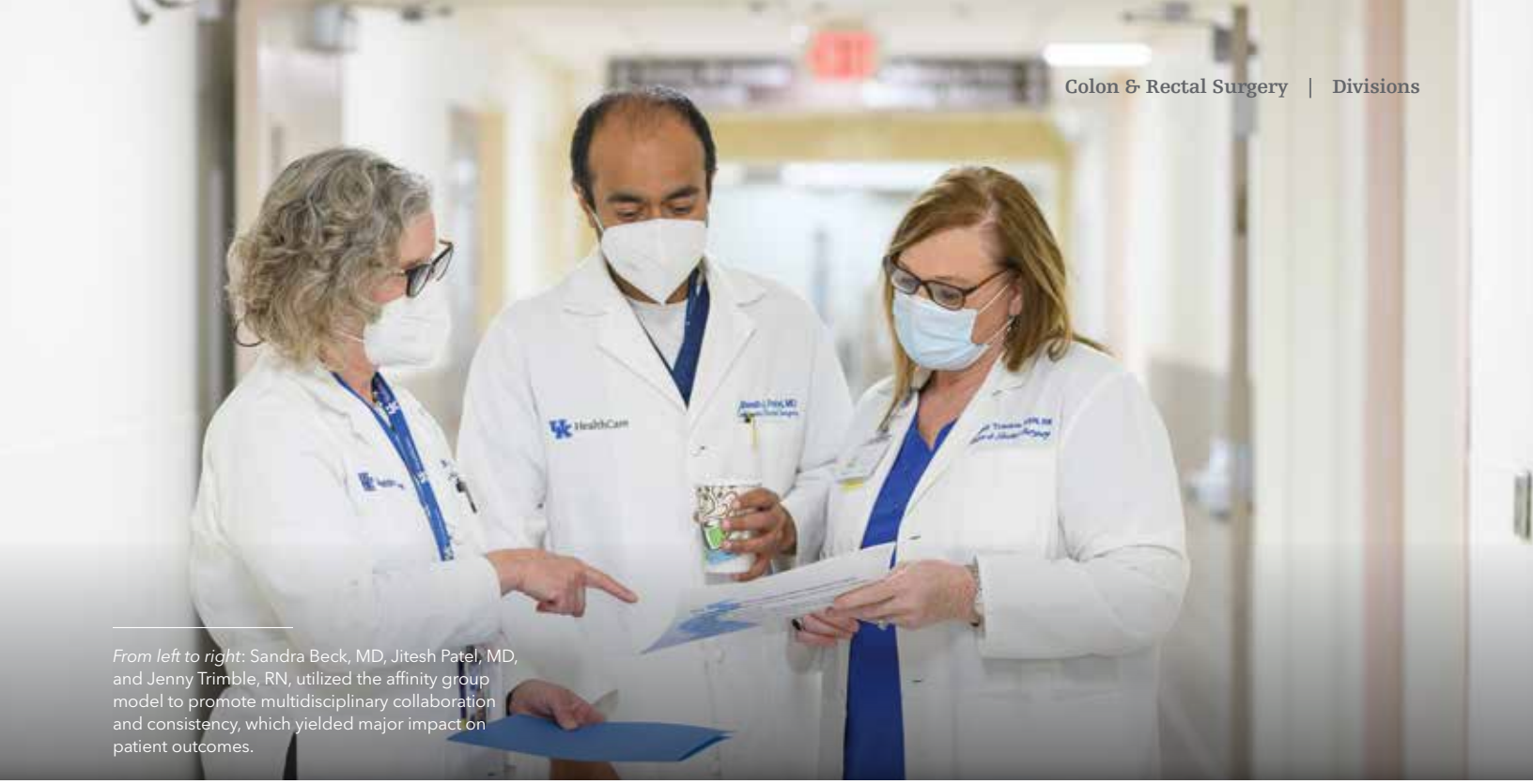
4,234
2019 Clinic Visits

3,999
2020 Clinic Visits*

5
2020 Industry-sponsored, Federal, and NIH grants

$297,623
2020 Contract Income

*Decreased numbers attributed to COVID-19 pandemic and its impact on healthcare, globally.



From left to right: Sandra Beck, MD, Jitesh Patel, MD, and Jenny Trimble, RN, utilized the affinity group model to promote multidisciplinary collaboration and consistency, which yielded major impact on patient outcomes.

AFFINITY GROUP DECREASES **SURGICAL SITE INFECTIONS**

The data was clear. UK HealthCare was experiencing an alarming increase in its colorectal surgical site infection (SSI) rates. Sandra Beck, MD,professor of Surgery and division chief of Colon and Rectal Surgery, and Jitesh Patel, MD, professor of Surgery, championed a multidisciplinary team — the Surgical Site Infection-Colon Affinity Group — to address two significant challenges. Patient case mix indexes are among the highest in the country, and surgery is performed on one of the most naturally contaminated areas of the body.

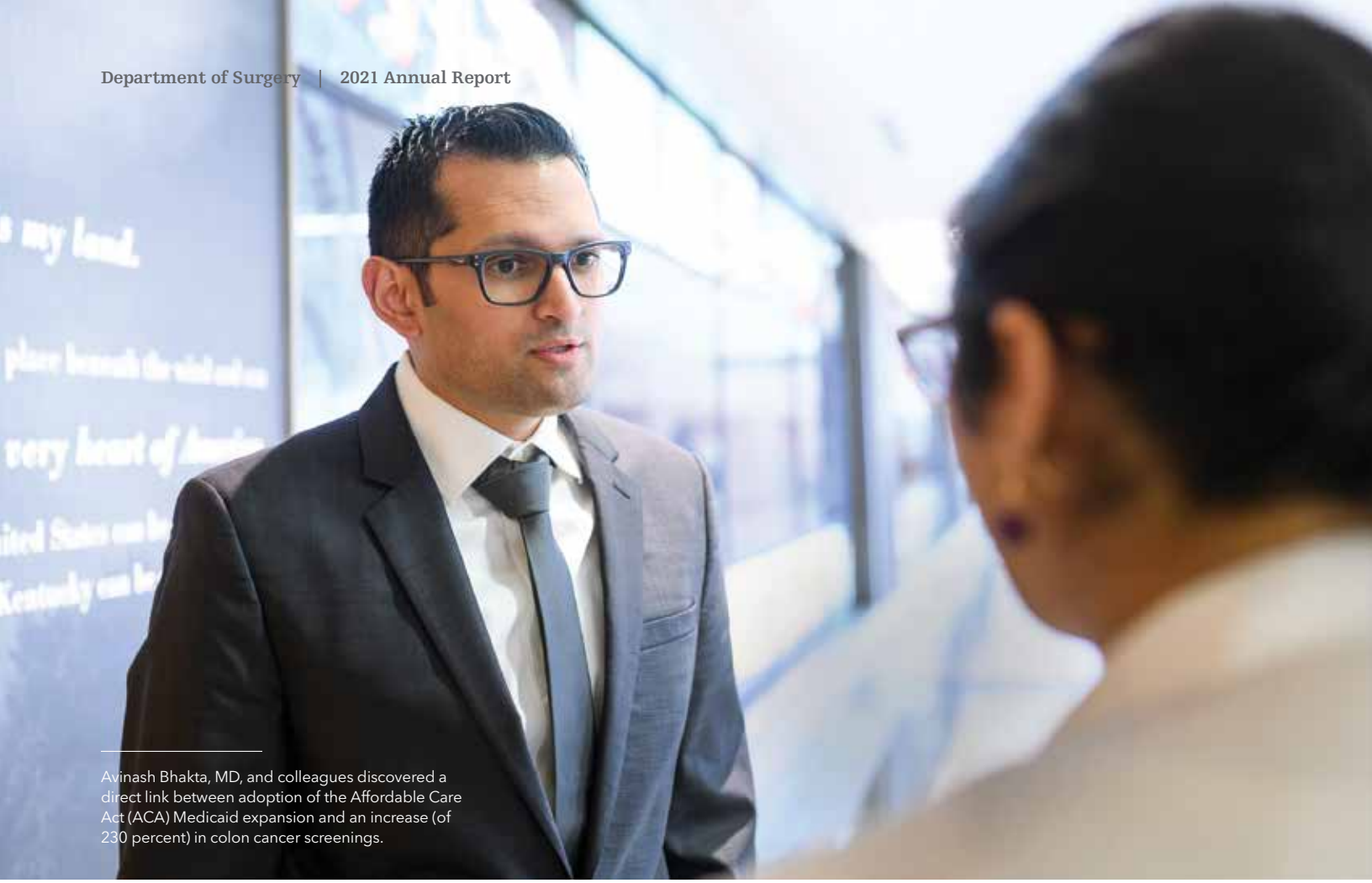
"The colon is a dirty organ," Beck said. "It's where all your waste is, so it has a lot of bacteria in it. [Colorectal surgery] is like plumbing; we take out sections of pipe [intestine] and put it back together. If just a little bit leaks from the pipe, then you get an infection, because you're already dealing with an area that's not sterile."

Despite this, the affinity group has managed to decrease colon surgical site infection rates to among the lowest in the nation. Small but impactful intraoperative changes have contributed to improved patient outcomes. The antibiotic used for prophylaxis during surgery was swapped, as more than 50% of E. coli infections were no longer sensitive to former medication. Prior to closing up the surgical site, the surgical team replaces their gloves and switches to clean instruments. Antibiotic dosing is tracked, in real-time, in the operating room — highly visible to everyone. Standardized postoperative orders prevent confusion and inaccuracies in patients' postsurgical dietary plans.

Some of the group's more progressive initiatives include optimizing the patient pathway for some lower-acuity issues, streamlining transitions between outpatient and inpatient settings, and assessing whether patients are at a greater risk of infection due to higher blood glucose levels, which can contribute to wound infection.

Enterprise-wide experts have contributed to the team's successes. Its core group includes surgeons, pharmacists, nurses, anesthesiologists and opioid stewardship representatives. (If patients are not taking a lot of opioids, then their bowels work quicker. They go home faster and seem to have fewer complications.) The Division of Healthcare Outcomes and Optimal Patient Safety Services provided National Surgical Quality Improvement Program risk-adjusted SSI rates and tracking (see page 43). Information technology helped by setting up an electronic dashboard to display the data.

The affinity group's incredible success is clear: In July 2019, the group's surgical site infection rate for colon surgeries was at 3.4 percent. That rate dropped to 1.5 percent — equivalent to approximately 16 infections. System-wide the infection rate has decreased from 3.2 percent to 2.1 percent. The 2019 Vizient Quality & Accountability Scorecard shows that UK HealthCare has moved from the lower 20 percent of peer groups to the top 40 percent in terms of reducing colon surgical site infection rates.



Avinash Bhakta, MD, and colleagues discovered a direct link between adoption of the Affordable Care Act (ACA) Medicaid expansion and an increase (of 230 percent) in colon cancer screenings.

ACCESS TO CARE TRIPLES KENTUCKY'S **COLON CANCER SCREENINGS**

A team of UK researchers, led by Avinash Bhakta, MD, associate professor of surgery and a colorectal surgeon, identified a direct link between the adoption of the Affordable Care Act (ACA) Medicaid expansion and the impact of colon cancer screenings on Kentuckians.

Results showed a substantial increase — 230 percent — in the number of Medicaid patients who received colon cancer screening post-expansion compared to Medicaid patients who received screening prior to the expansion. This was particularly prominent in the Appalachian region of the state, where 43 percent more patients received screening post-expansion. For Medicaid patients in Appalachia, data also showed a 9.3 percent increase in early stage diagnosis of colon cancer, when the disease is more easily treated. Statewide, researchers noted a 27 percent decrease in risk of death after the expansion.

Kentucky ranks first in the nation for colon cancer cases and fifth for colorectal cancer mortality. Appropriate screenings for colorectal cancer contribute greatly to prevention but also treatment, as physicians can find and remove pre-cancerous lesions before they become malignant.

In the study, published in the *Journal of the American College of Surgeons*, researchers looked at statistics for screening, incidence and outcomes of colon cancer from the Kentucky Hospital Discharge Database in the Kentucky Cabinet for Health and Family Services and the Kentucky Cancer Registry. Pre-ACA Medicaid expansion (2011-2013) — where approximately 14 percent of Kentuckians were uninsured — was compared to post-ACA Medicaid Expansion (2014-16), where that number dropped to about six percent.

Among the study's collaborators were Markey Cancer Center researchers and Department of Surgery faculty and residents, including: Tong Gan, MD; Heather F. Sinner, MD; Samuel C. Walling, MD; Quan Chen, DrPH; and B. Mark Evers, MD.

"The takeaway here is that screening does matter, and the expansion of Medicaid has increased usage of colon cancer screening for many Kentuckians who otherwise wouldn't have had access," Bhakta said.

COLON & RECTAL SURGERY FACULTY

Sandra Beck, MD, FACS
Division Chief; General Surgery Residency Program Director

Jitesh Patel, MD, MBA, FACS
Colon and Rectal Surgery Fellowship Program Director; General Surgery Residency Associate Program Director

Avinash Bhakta, MD, FACS

Greg Charak, MD

Jon S. Hourigan, MD, FACS

HIGHLIGHTS

Bhakta uses first R-TAMIS to treat cancer patient

Avinash Bhakta, MD, performed the first robotic-assisted Trans-Anal Minimally Invasive Surgery (R-TAMIS) at UK HealthCare in January 2020 to treat a patient with early onset rectal cancer. TAMIS, usually performed endoscopically, is a relatively common procedure to remove T-1 polyps (that show no high-risk cancerous features) in the lower rectum. However, in these procedures, suturing the affected area after polyp removal is difficult due to enclosed space; instruments have a limited range of motion. Robotic-assisted procedures give surgeons finer degrees of control within a confined area. R-TAMIS can achieve better angles to suture an area closed after polyp removal and allows for better resection of the entire polyp.

DIVISIONS

GENERAL, ENDOCRINE, & METABOLIC SURGERY

The Division of General, Endocrine, & Metabolic Surgery (GEMS) faculty provide expertise in all aspects of patient care, including complex gastrointestinal, general, endocrine and metabolic surgical care. Board-certified, fellowship-trained endocrine faculty have clinical prowess in benign and malignant thyroid, parathyroid and adrenal disease. Metabolic faculty have extensive experience in the diagnosis and treatment of the gastrointestinal tract. The division-based Center for Advanced Training & Simulation is developing and training physicians in innovative strategies for managing a host of surgical problems using minimally invasive techniques.

1,084
2019 Surgical Cases

1,020
2020 Surgical Cases*

2,634
2019 Clinic Visits

2,372
2020 Clinic Visits*

7
2020 Industry-sponsored, Federal, and NIH grants

$450,960
2020 Contract Income

*Decreased numbers attributed to COVID-19 pandemic and its impact on healthcare, globally.

Joshua P. Steiner, MD, is confident the new, contemporary weight loss program will have a positive impact on the people of Kentucky.

CONTEMPORARY WEIGHT LOSS **PROGRAM RESHAPES PATIENT LIVES**

The newly formed Weight Loss Surgery Program at UK HealthCare brings together the expertise of three bariatric surgeons and a team of healthcare professionals.

"Very few programs have more than two surgeons taking care of patients before, during and after surgery," said Joshua P. Steiner, MD. "We have three bariatric surgeons who each have over 20 years of experience." Steiner is UK HealthCare's new director of bariatric surgery. He is leading development of the new program, along with William B. Inabnet, III, MD, MHA, chair of the Department of Surgery, and J. Scott Roth, MD. Steiner notes that UK hasn't had a comprehensive bariatric program since the departure of Ward O. Griffen, Jr., MD, surgery department chair from 1968 until 1984.

"We have the resources, and we're building the infrastructure," said Steiner, who sees patients in clinic at the newly renovated UK HealthCare – Turfland outpatient center.

The weight loss program will also expand obesity research at UK. "There's so much to learn about ways to prevent the epidemic of obesity, as well as the treatment," Steiner said. The program also offers general surgery residents important bariatric surgery training experience that wasn't available at UK until now.

Steiner is confident the new program will have a positive impact on the people of Kentucky. "There is a great need for bariatric surgery in this part of the country," he said. "With the dedication and commitment of the university to this program, we can deliver care that is second to none in the Commonwealth."

HIGHLIGHTS

Dynamic collaboration advances research

Kentucky has the nation's fifth-highest obesity rate and fourth-highest Type 2 diabetes rate. The Alliance for Diabetes and Obesity Research (ADORE) is the new research arm of the new UK HealthCare Weight Loss Surgery program that brings together a transdisciplinary team to evaluate the effect obesity and diabetes have on the health of Kentuckians. ADORE is supported by the UK College of Medicine Alliance Research Initiative, which provides seed funding for campus-wide research teams to study the state's health challenges. Senior ADORE investigators mentor more than 15 junior researchers on study content and execution, provide assistance in securing of National Institutes of Health funding, and advise on grant writing and submitting more competitive applications.

‘ALL-IN-ONE’ VISIT EPITOMIZES **PATIENT-CENTERED CARE**

The endocrine surgeons at UK HealthCare developed a unique patient-centered process to diagnose and treat patients with concerns for thyroid, parathyroid or adrenal disease. Patients meet with a doctor, receive testing and diagnosis, and, if necessary, schedule a surgery — all in a single visit. Since patients often travel from great distances to receive care, this patient-centered care model has enhanced importance.

In many places, thyroid patients must schedule multiple appointments to get ultrasounds, biopsies and lab results before a treatment plan is even discussed. UK HealthCare patients come from across Kentucky. It is not uncommon for patients and their families to drive several hours for clinic appointments. With that in mind, the UK Endocrine Surgery team organized a better patient-care process to eliminate inconvenient, time-consuming travel.

“We made a deliberate decision to streamline the process for our patients’ care and convenience,” said Cortney Lee, MD, an endocrine surgeon and associate professor of surgery. “Our main goal is to avoid surgery if possible. Based on results of molecular testing, we can advise our patients on the best course of treatment. If surgery needs to be performed, it can be scheduled before the patient returns home.”

If the clinic surgeon confirms a patient has a thyroid nodule requiring further examination, an ultrasound and needle biopsy are performed at that time. Fellowship-trained cytopathologists are on-site to analyze the biopsied tissue and determine if it is benign or malignant.

Post-surgical follow-up is handled primarily through UK TeleCare visits and communication with the patient’s local primary care provider.

GENERAL, ENDOCRINE, & METABOLIC SURGERY FACULTY

J. Scott Roth, MD, FACS
Division Chief

William B. Inabnet III, MD, MHA, FACS
Department Chair

Cortney Y. Lee, MD, FACS
Section Chief of Endocrine Surgery; Medical Student Clerkship Director

David Sloan, MD, FACS, FRCSC

Erik Ballert, MD, FACS
Vice Chair of VA Affairs; Chief of VA Surgical Services

William Cavatassi, MD, FACS

Melissa R. Newcomb, MD, FACS
Assistant Dean for Assessment and Evaluation; Section Chief of General Surgery, VA Medical Center; Associate Program Director, General Surgery Residency

Crystal F. Totten, MD, FACS
Co-Chair of the Department of Surgery Diversity, Equity, and Inclusion Task Force

NEW FACULTY 2019-2020

Joshua Steiner, MD, FACS

DIVISIONS

HEALTHCARE OUTCOMES & OPTIMAL PATIENT SERVICES

In an effort to achieve optimal surgical outcomes, the Division of Healthcare Outcomes and Optimal Patient Services (HOOPS) collects, reports and synthesizes data for the Department of Surgery. Insights gained from HOOPS' effort accelerates transformation within our department but has tremendous impact on the larger UK HealthCare system, its clinics and its hospitals. The division values data-driven decision-making, discovery, transparency and big data analytics as drivers of surgical quality improvement.

43
2019 Resident/student Co-authors of Peer-reviewed Journal Articles

62
2020 Resident/student Co-authors of Peer-reviewed Journal Articles

48
2019 Faculty Co-authors of Peer-reviewed Journal Articles

65
2020 Faculty Co-authors of Peer-reviewed Journal Articles

23
2019 Resident/student Co-authors of National Presentations

10
2020 Resident/student Co-authors of National Presentations*

31
2019 Faculty Co-authors of National Presentations

11
2020 Faculty Co-authors of National Presentations*

*Ended May 2020.

Dan Davenport, PhD, is chief of the Division of Healthcare Outcomes and Optimal Patient Services, which leverages data to improve decision-making.

TRANSLATING SURGICAL **OUTCOMES TO OPTIMAL CARE**

The UK Department of Surgery established the Division of Healthcare Outcomes and Optimal Patient Services (HOOPS) as a key facet of its reorganization in July 2020. The move recognizes the growing importance of clinical retrospective research in informing clinical research, improving quality and optimizing surgical outcomes.

HOOPS is charged with transforming the massive quantity of health care data into information that:

- Deepens knowledge of surgical diseases and outcomes.
- Improves decision-making regarding the structure, technology, providers and processes of surgical care.
- Provides feedback on the results of surgical innovation and improvement processes.

UK is a founding member of the National Surgical Quality Improvement Program (ACS-NSQIP) in the non-Veterans Affairs sector, and helped facilitate eventual adoption of the program nationally by the American College of Surgeons. The HOOPS division also oversees collection of data and reporting for the Society of Thoracic Surgery (STS) database.

In addition to management of the NSQIP and STS registries, the division accesses an extensive array of sources and compiles surgical outcomes data across the spectrum of surgical specialties. The division assists faculty, residents and medical students in the research and dissemination of new knowledge, improving decision making, and driving innovation toward optimal surgical patient care.

Meet the HOOPS team

Dan Davenport, PhD, MBA, professor of Surgery and chief of HOOPS, has nearly three decades of experience analyzing clinical data, and assessing surgical risk and outcomes. He sat on the NSQIP data committee during the ACS-NSQIP development phase and is the course director for the medical student Research in Surgery electives. Davenport also works extensively with faculty, residents and medical students on a broad range of retrospective clinical research studies, providing methodological and data design consultation, as well as biostatistics support. He has authored or co-authored close to 200 peer-reviewed journal articles.

Devauna Adkins, RN, Senior NSQIP Surgical Clinical Reviewer, is a founding NSQIP nurse and has been associated with the program since 1999. She extracted the first case in the ACS-NSQIP database dated October 9, 1999.

Program supports residents on their research journey

Since launching in 2015, the Residents in Research program has realized its primary aim — to increase the number of surgery residents participating in surgical research. In only a few years, the program has tracked an increase in articles published in peer-reviewed journals with residents as first or secondary authors. Several residents have been invited to present at national and international conferences.

The program matches surgery faculty mentors with categorical interns from General, Cardiothoracic and Plastic & Reconstructive Surgery, as well as Urology, and introduces them to the fundamentals of surgical research. A core team guides residents through conceptualizing, designing and implementing a research study.

Critical success factors include four didactic sessions, methods and data consultation, Institutional Review Board (IRB) and administrative support, and most importantly, involvement of surgical faculty and the program directors who provide mentoring and oversight.

“Given the limited time and experience of most first-year residents, retrospective studies of surgical procedures are the best way to get them started in research,” said Dan Davenport, PhD, division chief of HOOPS.

The core support team includes Davenport; Anna Rockich, Pharm.D., MS, director of clinical research; Margaret Plymale, DNP, RN, GEMS Division Nurse Coordinator; Linda Combs BA, lead publications officer; and Leslie Young, BS, administrative associate for regulatory support.

HOOPS FACULTY AND SURGICAL NURSE CLINICAL REVIEWERS

Daniel Davenport, PhD
Division Chief

Devauna Adkins, RN

Tiffanie Cavatassi, RN

Kim Poland, RN

Rena Warner, RN

HIGHLIGHTS

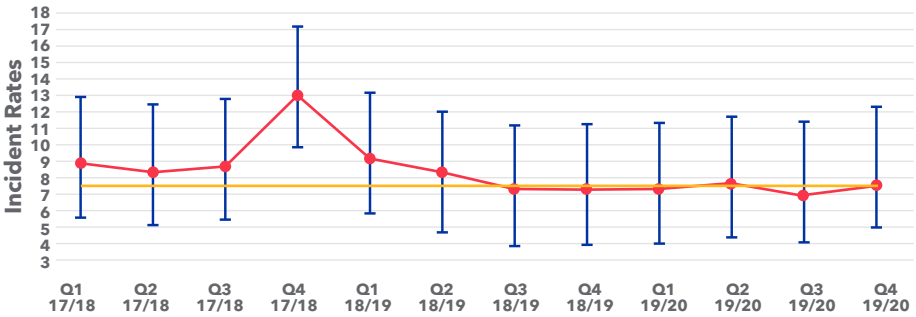
2020 ACS research honors

Jacob Hubbuch, a fourth-year medical student, received first place in the Education, Innovation and Outcomes category of the American College of Surgeons' (ACS) Medical Student research program. His abstract, "Ventral Hernia Repair with Soft Tissue Excision Impacts Costs and Outcomes," was selected from more than 200 submissions. Hubbuch credited several students and faculty, along with the HOOPS team, for their work and support of the project.

Data drives change

The HOOPS division specializes in outcomes-based data designed to help surgical services at UK HealthCare improve patient care and implement changes that result in positive outcomes. In the figure below, elevated colorectal surgical site infection (SSI) rates were identified, and an enterprise-wide multidisciplinary affinity group was formed to address the problem, championed by colon and rectal surgeons Sandra Beck, MD and Jitesh Patel, MD. HOOPS provided NSQIP risk-adjusted SSI rates and tracking. SSI rates have decreased and stabilized. Read more on page 33.

UK HealthCare National Surgical Quality Improvement Program (NSQIP)
Reduction in Risk-Adjusted Colorectal Surgical Site Infection (SSI) Rates



DIVISIONS

PEDIATRIC SURGERY

Caring for children from infancy through the young adult years, Division of Pediatric Surgery specialists provide some of the country's most advanced surgical procedures at UK HealthCare Kentucky Children's Hospital. Our experts provide diagnostic evaluation and treatment for newborns, infants, children and adolescents with congenital anomalies and acquired conditions. When an expectant mother is informed her baby may need surgery in the first weeks of life, Pediatric Surgery offers compassionate prenatal consults. KCH offers Eastern and Central Kentucky's only Level I pediatric trauma center, Level IV neonatal intensive care unit and pediatric intensive care unit.

1,230
2019 Surgical Cases

1,174
2020 Surgical Cases*

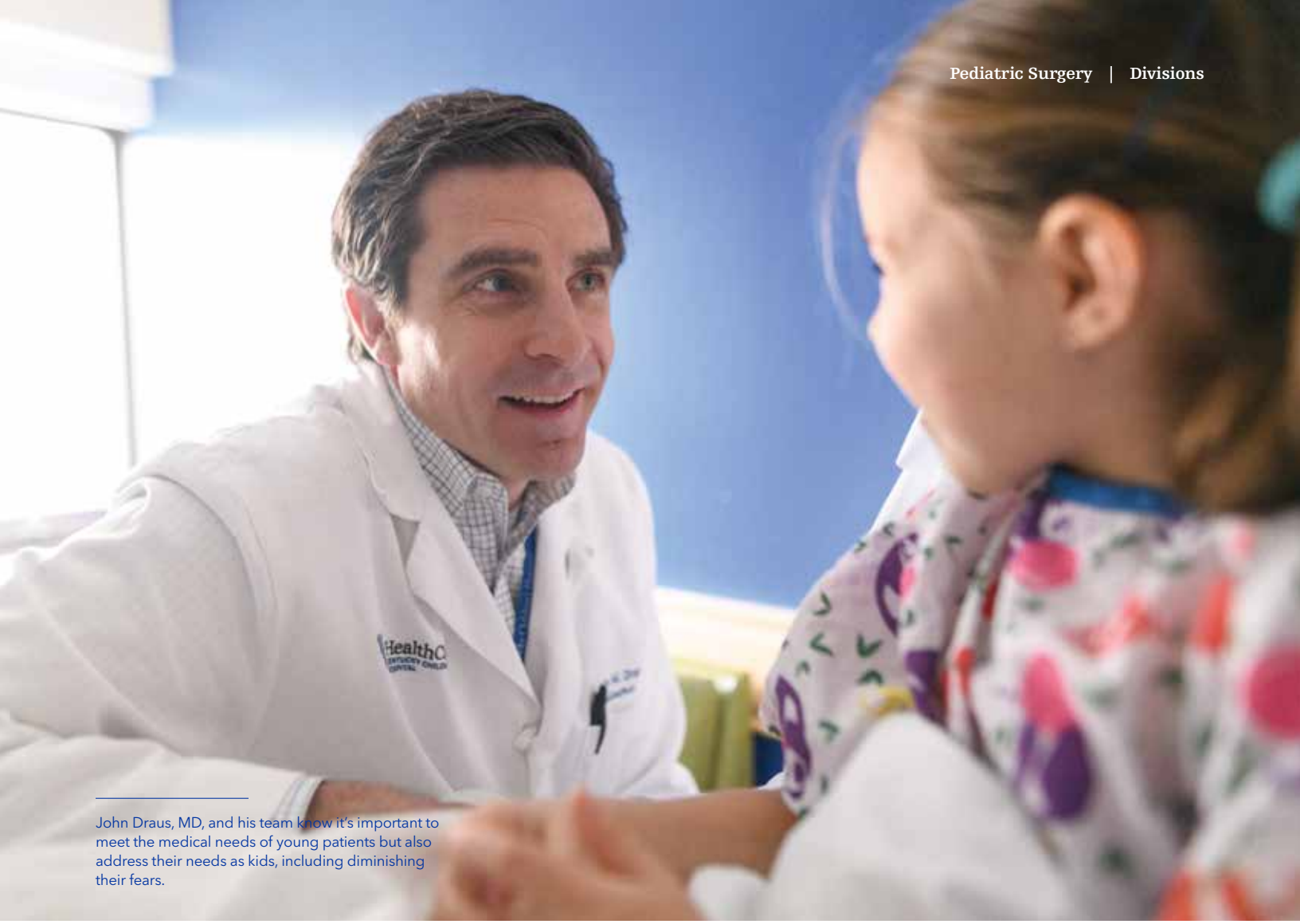
2,690
2019 Clinic Visits

2,672
2020 Clinic Visits*

1
2020 Industry-sponsored, Federal, and NIH grant

$24,326
2020 Contract Income

*Decreased numbers attributed to COVID-19 pandemic and its impact on healthcare, globally.



John Draus, MD, and his team know it's important to meet the medical needs of young patients but also address their needs as kids, including diminishing their fears.

CHANGING YOUNG LIVES THROUGH **COMPASSION & COMMITMENT**

From treating tiny newborns with congenital abnormalities to teens with traumatic injuries, the pediatric surgery team at UK HealthCare's Kentucky Children's Hospital (KCH) provides care and comfort to some of Kentucky's highest-acuity patients.

"The teamwork that goes into this, and the dedication that goes into the care of these kids are what really makes KCH special," said John Draus, MD, chief of the Division of Pediatric Surgery, who was named KCH's chief medical officer in January 2021 after serving as interim CMO.

Kentucky Children's Hospital offers Central and Eastern Kentucky's:

- Only ECMO Center of Excellence, one of fewer than 100 recognized centers in the world.
- Only Level 1 Pediatric Trauma Center.
- Highest-level Neonatal Intensive Care Unit, caring for some of Kentucky's tiniest and sickest patients.
- More than 30 advanced subspecialties, all devoted to children.

In addition to providing the highest level of specialty surgical care, UK HealthCare's pediatric surgery team strives to be a reassuring presence for the hospital's young patients, as well as their parents and loved ones. This has been especially true throughout the COVID-19 pandemic.

"The past year has been an especially hard time for our pediatric patients," said Draus, who served as part of a CMO team instrumental in leading UK HealthCare's work through the pandemic. "They've needed us. That's why KCH exists. Though children have mostly been spared the more serious symptoms of the coronavirus, they have been impacted in other ways. It has made our brand of compassionate care extremely important."

World-renowned expert leads pediatric heart partnership

Carl Lewis Backer, MD, a world-renowned children's heart surgeon, joined UK HealthCare in May 2020 as section chief of pediatric cardiothoracic surgery at Kentucky Children's Hospital (KCH). Backer leads the KCH division of the Joint Pediatric Heart Care Program, a collaboration between UK HealthCare and Cincinnati Children's Hospital Medical Center. Backer is based at UK HealthCare and is a professor in the Division of Cardiothoracic Surgery. At the same time, he holds a primary appointment at Cincinnati Children's. With extensive experience as a surgeon, leader and educator, Backer advances the program in its mission of providing world-class, comprehensive cardiac care to UK HealthCare pediatric patients close to home. For the past two years, U.S. News & World Report's listing of Best Children's Hospitals has ranked the Joint Heart Program in the top 15 in the country for pediatric cardiology and heart surgery.

UK HealthCare names medical director of Pediatric Trauma

Andrea Doud, MD, a pediatric surgeon, became medical director of the UK HealthCare Level I Pediatric Trauma Program in January 2021. During a general surgery residency at Wake Forest University, Doud served two years as a Bradshaw Research Fellow and a Childress Institute for Pediatric Trauma Scholar. Her experience led to publications in major research journals on studies ranging from youth injuries in all-terrain vehicles to evaluating triage metrics for appropriate treatment of pediatric trauma patients.

Department of Surgery appoints chief wellness officer

Pediatric surgeon **David Worhunsky, MD**, was named chief wellness officer for the Department of Surgery and serves as co-chair of the General Surgery Wellness Committee. During his time as a surgical oncology clinical research fellow at Stanford Medicine, Worhunsky gained first-hand experience of the university's highly regarded Wellness Program. Now, he is leveraging that involvement as an investigator in a large, national study. The SECOND Trial (Surgical Education Culture Optimization through targeted interventions based on National comparative Data) is analyzing surgical education with respect to learning environment and resident wellness. UK is one of the random groups that has additional access to intervention mechanisms, including a wellness toolkit and more in-depth, detailed findings.

PEDIATRIC SURGERY FACULTY

John M. Draus, MD, FAAP, FACS
Division Chief;
Chief Medical Officer, Kentucky Children's Hospital

NEW FACULTY 2019-2020

Andrea Doud, MD
Medical Director, Pediatric Trauma Program

David Worhunsky, MD
Department of Surgery
Chief Wellness Officer

HIGHLIGHTS

Honoring Andy & Evelyn Pulito

The Division of Pediatric Surgery has successfully raised funds to name the NICU Procedure Room in honor of Dr. Andy & Mrs. Evelyn Pulito, recognizing their decades of service to Kentucky Children's Hospital. The money will be donated to the Kentucky Children's Hospital NICU Child Life program at UK HealthCare. Fundraising efforts are under way to fully fund a named professorship for Dr. Pulito. Contributions can be made by contacting Lori Donaldson, KCH Office of Philanthropy, at lori.donaldson@uky.edu

Advancing pediatric trauma research

John Draus, MD, chief of the Division of Pediatric Surgery, recently collaborated with UK surgical residents Jennifer Castle, MD, and Brittany Levy, MD, who presented video abstracts at the 2020 Pediatric Trauma Society Meeting. Castle's study evaluated pediatric intensive care unit (PICU) staff attendance at pediatric trauma activations resulting in improved patient outcomes. Levy's study identified the outcomes of high-grade blunt renal injury patients who received angioembolization compared with those who did not.

DIVISIONS

PLASTIC & RECONSTRUCTIVE SURGERY

Comprised of board-certified, fellowship-trained surgeons, the Division of Plastic & Reconstructive Surgery merges art and science to provide a full complement of reconstructive and aesthetic services to both adults and children. The division has experienced momentous growth over the past few years, marked by development of new services and ambulatory space. UK HealthCare – Turfland, a 160,000-square foot outpatient center in Lexington, is home to the division's Plastic & Reconstructive Surgery practice and a new Aesthetics Center, as well as its new Hand Center — the only university-based comprehensive hand center in Kentucky. Plastic and Reconstructive Surgery faculty research interests include wound healing including burns, breast cancer etiology, implant biofilms, tendon repair and microvascular surgery.

2,424
2019 Surgical Cases

2,070
2020 Surgical Cases*

14,104
2019 Clinic Visits

12,187
2020 Clinic Visits*

2
2020 Industry-sponsored, Federal and NIH grants

$94,033
2020 Contract Income

*Decreased numbers attributed to COVID-19 pandemic and its impact on healthcare, globally.

Debra Anne Bourne, MD, explains arthritis at the base of the thumb to a patient.

COLLABORATIVE CARE COMES TOGETHER AT AREA'S ONLY **COMPREHENSIVE HAND CENTER**

A true demonstration of multidisciplinary care, Plastic & Reconstructive Surgery Hand Surgeons have partnered with UK Orthopaedic Hand Surgeons and Hand Therapy to launch the UK HealthCare Hand Center. The 5,000-square-foot, state-of-the art facility – the only university-based comprehensive hand surgery service serving Kentucky – is dedicated to the diagnosis and treatment of shoulder, hand, wrist and forearm conditions from trauma, overuse or disorders affecting the upper extremity.

The center's fellowship-trained hand surgery experts specialize in all types of hand surgery, from microsurgery to complex wrist procedures. Surgeons work closely with the center's hand therapists, who are embedded within the center, to maximize communication, deliver innovative treatments and ensure patients receive optimal care.

"Hand pain affects every aspect of everyday life, and it can range from frustrating to debilitating," said David Drake, MD, director of the Hand Center and chief of Plastic & Reconstructive Surgery. "With this new dedicated team, we can efficiently help more patients get back to doing the things they love."

Currently, between 600 to 800 patients visit the center each month with numbers continuing to increase. Patients seek care at the Hand Center for a variety of injuries and conditions, such as work-related injuries, repetitive motion injuries, osteoarthritis and rheumatoid arthritis.

The Hand Center serves Central, Southeast and Eastern Kentucky and works closely with other medical specialties, including fellowship-trained musculoskeletal radiologists, orthopaedic sports medicine doctors, rheumatologists, and physical medicine and rehabilitation doctors. Hand Center providers routinely hold combined conferences to discuss difficult cases.

The center, part of the newly renovated UK HealthCare – Turfland outpatient facility, features on-site diagnostic testing, on-site hand therapy, guided imaging injections, and the latest in supportive orthopaedic devices and therapies.

"We have assembled a superb team of providers to address all the patient's needs at the point of care," Drake said. "It's truly a one-stop shop for hand care."

In addition to Drake, the Hand Center's core team is comprised of plastic and reconstructive surgeons Debra Anne Bourne, MD, assistant professor of surgery, and Morgan S. Brgoch, MD, as well as their orthopaedic surgery colleagues.

Amanda Silva, MD, has extensive experience in the field of microsurgery, including reconstruction of face and breast following cancer or trauma, as well as treatments to re-animate facial nerves due to facial palsy or paralysis.

RECONSTRUCTIVE MICROSURGERY **RESTORES FORM AND FUNCTION**

In late 2020, Amanda Silva, MD, assistant professor of surgery, joined the Division of Plastic and Reconstructive Surgery as section chief of microsurgery.

Silva specializes in microsurgery and complex reconstruction, particularly in facial reconstruction following trauma and skin cancer, including Mohs resections; head and neck reconstruction after cancer or trauma; and treatments for facial palsy and paralysis, some of which leads to reanimation of facial nerves.

"With reconstructive surgery, there are often multiple, potential options for patients, depending on their unique needs and goals," Silva said. "It's important that I am able to offer all these options and provide patients with the information they need to make the best decision specifically for them."

Silva has expertise in breast reconstruction, including oncoplasty, autologous free flap reconstruction, and implant-based reconstruction. Her clinical practice is based out of UK HealthCare – Turfland.

The focus of Silva's research is studying patient quality of life and long-term outcomes following head and neck reconstruction, as well as collaboration among subspecialists and physician wellness. She is dedicated to improving patient experience and outcomes in complex reconstruction, and fostering better collaboration among surgical subspecialties to streamline patient care.

PLASTIC & RECONSTRUCTIVE SURGERY FACULTY

David Drake, MD, FACS
Division Chief; Director of Hand Surgery Fellowship and Service at UK HealthCare

Henry Vasconez, MD, FACS
Director, Burn Clinic

Lesley Wong, MD, FACS
Program Director of Integrated 6-Year Plastic Surgery Residency; Director of Burn Unit

James Liau, MD, FACS
Clinical Director of Plastic Surgery

NEW FACULTY 2019–2020

Debra Anne Bourne, MD

Morgan Brgoch, MD

Amanda K. Silva, MD
Section Chief of Microsurgery

Drake named president of Southeastern Society of Plastic and Reconstructive Surgeons

As an actively engaged member for nearly 30 years, **David B. Drake, MD**, division chief of Plastic and Reconstructive Surgery, was installed as president of the Southeastern Society of Plastic and Reconstructive Surgeons (SESPRS) in June 2020. Drake has served in various capacities within the society, including membership of its scientific, program and research committees, as well as numerous executive committee appointments. SESPRS is widely viewed as the preeminent regional plastic surgery society in the country. The society has a strong commitment to innovation and research in addition to its foundational tenets of lifelong learning and education.

DIVISIONS

RESEARCH

The Division of Research — comprised of investigators with expertise in basic, clinical and translational science — is dedicated to fostering greater understanding of the causes and treatment of disease. Still in its infancy as a formal entity, the division is focused on providing broad-based support to surgery faculty, residents and doctoral candidates, as well as medical students, who continue the department's rich tradition of innovation, discovery, interdisciplinary cooperation and securing extramural funding. Across all nine of the department's clinical divisions, faculty serve as principal investigators in multiple federally-funded projects and industry-sponsored clinical studies, covering a wide range of subjects. Additionally, the College of Medicine and Department of Surgery have made significant investment in pilot projects that show promise for further development.

$3.9 million
Department of Defense (DOD) awarded research grants

$2.8 million
National Institutes of Health (NIH) Awarded Research Grants

$155,000
Institutionally Peer-Reviewed Pilot Funding

Dongfang Wang, MD, PhD, Hiroshi Saito, PhD, and Marlene Starr, PhD, are three of the UK Department of Surgery's top investigators who receive grants and contracts from top tier funding sources.

RESEARCHERS LEAD THE WAY IN **SECURING MAJOR FEDERAL GRANTS**

The Dean's Office of the UK College of Medicine presented three UK Department of Surgery researchers – Hiroshi Saito, MD; Marlene Starr, PhD; and Dongfang Wang, MD, PhD – with Wethington Awards in 2020.

The annual Wethington Awards recognize UK medical research faculty for their success in securing major grants for their clinical and scientific research. They are an incentive for the university's research arm to seek extramural funding for original and significant research studies. The past fiscal year, the College of Medicine allocated over $2 million to be divided among honorees.

All three researchers are multi-year recipients. Wang, director of UK's Artificial Organ Laboratory and a recognized expert in heart and lung assist devices, has received numerous Wethington Awards. The 2020 award is for two grants, including a $3.9 million U.S. Department of Defense-sponsored grant for Medical Research Programs (see Page 14).

Saito's research has been continuously funded through NIH R01 grants for well over a decade. In recent years, his research group has worked on two NIH-funded projects (see Page 54).

Starr's main grants include an NIH R01 titled "Visceral fat gamma delta T cells in sepsis pathogenesis." Additionally, she has a related NIH R56 grant (see Page 54). Starr is also assisting UK researchers on pilot grants.

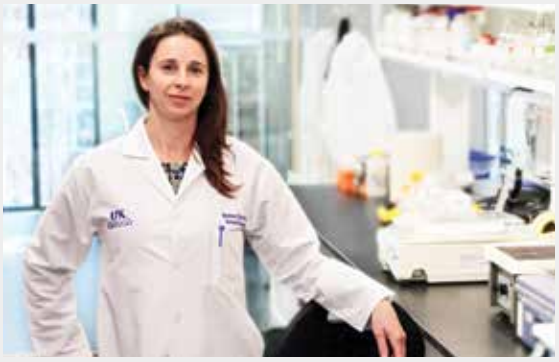
While Wethington Awards may be used, at the researcher's discretion, to assist with team payroll or as direct support for research activities, the award itself represents the importance the College of Medicine places on its research mission.

Saito's laboratory examines vulnerability to sepsis in the elderly

While mild injury, surgery or infection is often not deemed serious in younger populations, for elderly people it can lead to extreme illness and even death. **Hiroshi Saito, PhD**, professor of surgery, delves deeper into the mechanisms for age-dependent vulnerability to physiological stresses by using animal models of aging.

Saito's NIH-funded research focuses on the development of clinically relevant animal models of inflammatory diseases in which old animals exhibit significantly elevated disease severity and mortality compared to young animals. Using these models, the team has been working to reveal underlying physiological/molecular mechanisms for age-dependent disease severity.

Saito and his team's current projects involve elucidating the roles of visceral white adipose tissues in age-dependent severity of sepsis and acute pancreatitis. Another active ongoing project is to understand the molecular mechanisms of physiological dysfunction after recovery from severe sepsis. For this study, they developed a new murine sepsis-resuscitation model that exhibits long-term muscle weakness among animals that survived severe sepsis.



Starr's laboratory explores effects of adipose tissue inflammation

With funding from two NIH grants, **Marlene Starr, PhD**, associate professor of surgery and division chief of Research, serves as principal investigator (PI) or co-PI on a number of sponsored research programs exploring adipose tissue inflammation and sepsis.

Most recently, Starr's laboratory identified visceral fat-resident gamma delta T cells as primary contributors to age-associated chronic inflammation. Now, her laboratory is working to understand how these unique cells operate in the fat. Her other related projects include comparing immunophenotypes and immune cell function in adipose tissue during aging and obesity, two immensely different conditions that lead to similar pathologies in relation to cardiovascular disease.

Starr's sepsis research focuses on a molecule called PAI-1, which appears to be directly related to the development of acute kidney injury during the severe acute inflammatory condition. She and her team have been able to illustrate adipose tissue as a major source of pro-inflammatory and pro-coagulant mediators during sepsis and that secretion of these mediators from visceral fat may contribute to the development of distant organ injury, especially acute kidney injury during sepsis.

RESEARCH FACULTY

Marlene Starr, PhD
Division Chief

Cherry Ballard-Croft, PhD

Mei Gao, PhD

Francesc Marti, PhD

Anna Rockich, PharmD, MS
Director of Clinical Research Section

Hiroshi Saito, PhD

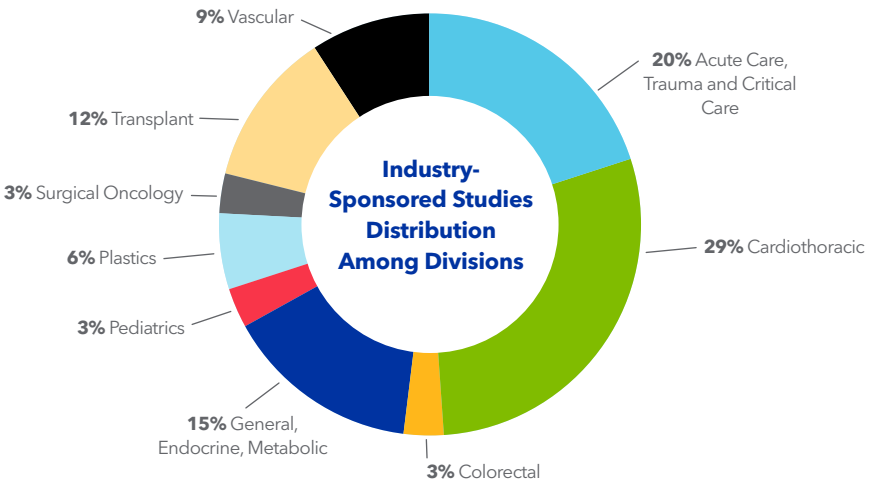
Dongfang Wang, MD, PhD
Director of Artificial Organ Laboratory

Zhongjiang Zhuang, MS

HIGHLIGHTS

Rockich appointed Director of the Clinical Research Section

Anna Rockich, Pharm. D., MS, was appointed director of the clinical research section in the Division of Research as part of the overall divisional reorganization of the UK Department of Surgery. As director, Rockich will centralize services and manage the experienced team of specialists providing support for the research endeavors of the surgical faculty in the department's nine clinical divisions. The chart below represents the distribution of industry funded research ongoing in those divisions.



DIVISIONS

SURGICAL ONCOLOGY

The Division of Surgical Oncology is charged with caring for patients who require operative intervention for the treatment of cancer. For patients with rare, unusual or complex cancers, the division has the expertise to diagnose, treat and rehabilitate. Surgical Oncology provides oversight of UK HealthCare's multidisciplinary clinics for breast disease, gastrointestinal malignancy and melanoma. Faculty are actively involved in research investigating cancer immunology, the role of biological response modifiers in the treatment of head and neck cancer, and translational research applying gene therapy to malignancies. Surgical Oncology is a leading provider of care delivered at Markey Cancer Center, which consistently ranks in *U.S. News & World Report's* top 50 national cancer care rankings.

1,393
2019 Surgical Cases

1,283
2020 Surgical Cases*

6,035
2019 Clinic Visits

6,276
2020 Clinic Visits

5
2020 Industry-sponsored, Federal, and NIH grants

$563,777
2020 Contract Income

*Decreased numbers attributed to COVID-19 pandemic and its impact on healthcare, globally.

Joseph Kim, MD, has performed nearly 500 HIPEC procedures, which kills cancer cells – both seen and unseen.

HIPEC TREATS OFTEN-CONSIDERED **UNTREATABLE CANCERS**

An increasing number of out-of-state cancer patients are making their way to UK HealthCare for a complex procedure delivering optimal patient outcomes. Patients who have cancer inside the abdominal cavity present one of the most difficult type of cancers to treat. Intravenous chemotherapy alone is ineffective. It doesn't penetrate cancers in the peritoneal cavity very well because there aren't distinct blood vessels that take the chemo to those tumors.

Hyperthermic Intraperitoneal Chemotherapy, or HIPEC, is a heated chemotherapy treatment delivered directly to the abdomen during surgery. Less than 2 percent of U.S. hospitals offer the procedure.

Joseph Kim, MD, professor of surgery and chief of Surgical Oncology, leads a multidisciplinary team, combining astute minds from surgery, radiology, pathology, medical oncology and social work. The team's combined experience is unparalleled.

"This complicated, extensive surgery removes all the cancer we see with our eyes but also kills cancer cells we cannot see, nor know exists," Kim said.

First, surgeons remove visible tumors in the abdominal area with cytoreductive surgery. The HIPEC treatment follows, delivering chemotherapy directly to the area and destroying non-visible cancer cells. Chemotherapy is heated to 103 degrees, and a catheter pumps it into the abdominal cavity. A second catheter brings it back into the machine. Commonly referred to as a chemotherapy bath, it "washes" away microscopic disease.

Minimized exposure to non-cancerous areas allows surgeons to utilize higher doses that maximize usage and outcomes. Hair loss and nausea are mitigated due to direct application and limited time.

The surgical procedure and treatment are "bookended" with IV chemotherapy. The first round prevents cancer from spreading and, ideally, reduces the tumor mass. This makes it easier for Kim and his team to go in for surgery. Afterward, chemo is used again to kill any microscopic traces of cancer that may have lurked behind.

Throughout his medical career, Kim has performed nearly 500 HIPEC procedures. As he and his team look to the future, they aspire to grow the program and help patients gain more time with their loved ones.

Erin Burke, MD, MS, and Emily Marcinkowski, MD, are expertly trained surgical oncologists and key providers at UK HealthCare's Comprehensive Breast Care Center.

BREAST CARE PROVIDERS HIDE **PHYSICAL, EASE EMOTIONAL SCARS**

Nearly 3,800 women in Kentucky will be diagnosed with breast cancer this year. It's the most common cancer diagnosis and the second leading cause of death in the Commonwealth. Physical scars – visible, emotional triggers – have spurred UK HealthCare to further advance its unsurpassed Markey Comprehensive Breast Care Center.

Assistant professors and surgical oncologists Emily Marcinkowski, MD, and Erin Burke, MD, MS, are guiding a key component of the center as expertly trained hidden scar breast cancer surgeons. Hidden scar procedures deliver both optimal clinical experience and cosmetic outcomes. Patients are at no higher risk of breast cancer recurrence than those who undergo other surgical techniques.

Surgeons remove the cancerous tissue through a small, single incision made in a hidden area, preserving the natural shape of the breast while reducing visible scarring. Consistent illumination throughout the surgical cavity ensures clear sight and effective removal of the tumor, which is critical during procedures such as lumpectomy and nipple-sparing mastectomy.

Amanda Silva, MD, was recruited to further expand upon the breast care center's existing strengths and serves as chief of microsurgery in the Division of Plastic and Reconstructive Surgery. For patients who have experienced trauma or cancer, she is able to present expert treatment options from which patients can make the best decision. Silva specializes in breast reconstruction, including oncoplasty, autologous free flap reconstruction, and implant-based reconstruction. (Read more about Silva on page 50.)

In 2020, Markey was designated as the No. 29 ranked cancer hospital in the nation by *U.S. News & World Report* and the fourth year to be ranked in the top 50 nationally. It's also Kentucky's only NCI-designated Cancer Center – an elite group of hospitals that lead the nation in cancer research, prevention and treatment.

SURGICAL ONCOLOGY FACULTY

Joseph Kim, MD, FACS
Division Chief

B. Mark Evers, MD, FACS
Vice Chair for Research; Director, Markey Cancer Center

Patrick McGrath, MD, FACS
Vice Chair for Clinical Affairs

Michael Cavnar, MD

Emily Marcinkowski, MD
Section Chief, Breast Surgery; Medical Student Advanced Development Director

NEW FACULTY 2019-2020

Dr. Erin Burke

Prakash Pandalai, MD
Co-Chair, Department of Surgery Diversity, Equity, and Inclusion Task Force

HIGHLIGHTS

McGrath promoted to Vice-Chair of Clinical Affairs

Surgical oncologist Pat McGrath, MD, was promoted to Vice-Chair of Clinical Affairs in the UK Department of Surgery, a new position created to represent faculty interests. McGrath also serves as Director of the Physician's Compensation Committee for UK HealthCare and is a strong, behind-the-scenes advocate for fair and transparent compensation for UK HealthCare faculty.

Cavnar leading hepatic artery infusion pump clinical trial

Michael Cavnar, MD, serves as principal investigator of a study assessing the safety of combining two separate medical devices (an implantable pump typically used to deliver pain medicine to the spinal cord, and a special catheter designed to be implanted into an artery). For the study, this device combination is surgically implanted in a way that allows chemotherapy to be infused directly into the liver at a higher dose, specifically for patients with unresectable liver metastases from colorectal cancer and unresectable intrahepatic cholangiocarcinoma. This study will determine if complication and pump loss rates will be similar to previously published rates of other devices. Reema Patel, MD, a UK HealthCare medical oncologist, is closely collaborating with Cavnar on study.

DIVISIONS

TRANSPLANTATION

The Division of Transplantation faculty, in collaboration with fellow UK HealthCare colleagues, perform more than 200 transplant procedures each year providing advanced, compassionate, patient-centered care for children and adults with end-stage diseases. UK HealthCare's transplant program is one of the oldest, most reputable in the area. Transplantation faculty, alongside Department of Urology clinicians, perform procedures that make possible live kidney donation to relatives and friends in need. UK HealthCare's liver program is nationally recognized for its high transplant rate and organ acceptance. With expertise in liver transplantation, division faculty are also able to offer advanced liver resection and other hepatobiliary procedures.

408
2019 Surgical Cases

455
2020 Surgical Cases

3,506
2019 Clinic Visits

3,174
2020 Clinic Visits*

8
2020 Industry-sponsored, Federal and NIH grants

$568,146
2020 Contract Income

*Decreased numbers attributed to COVID-19 pandemic and its impact on healthcare, globally.

Alexandre Ancheta, MD, and Meera Gupta, MD, proudly celebrated UK HealthCare's 3,000th kidney transplant. In spite of the COVID-19 pandemic, UK HealthCare achieved this major milestone and set a new record for its annual transplantation.

CELEBRATING 3,000 **KIDNEY TRANSPLANTS**

It was a record year for the UK Transplant Center in 2020. Despite the COVID-19 pandemic, the center not only performed its 3,000th cumulative kidney transplant, it also set a new record for its total kidney transplants in a calendar year.

Many factors contributed to the record-setting year. Roberto Gedaly, MD, division chief of Transplantation, attributed the achievement in part to the adoption of new programs and strengthening of existing ones.

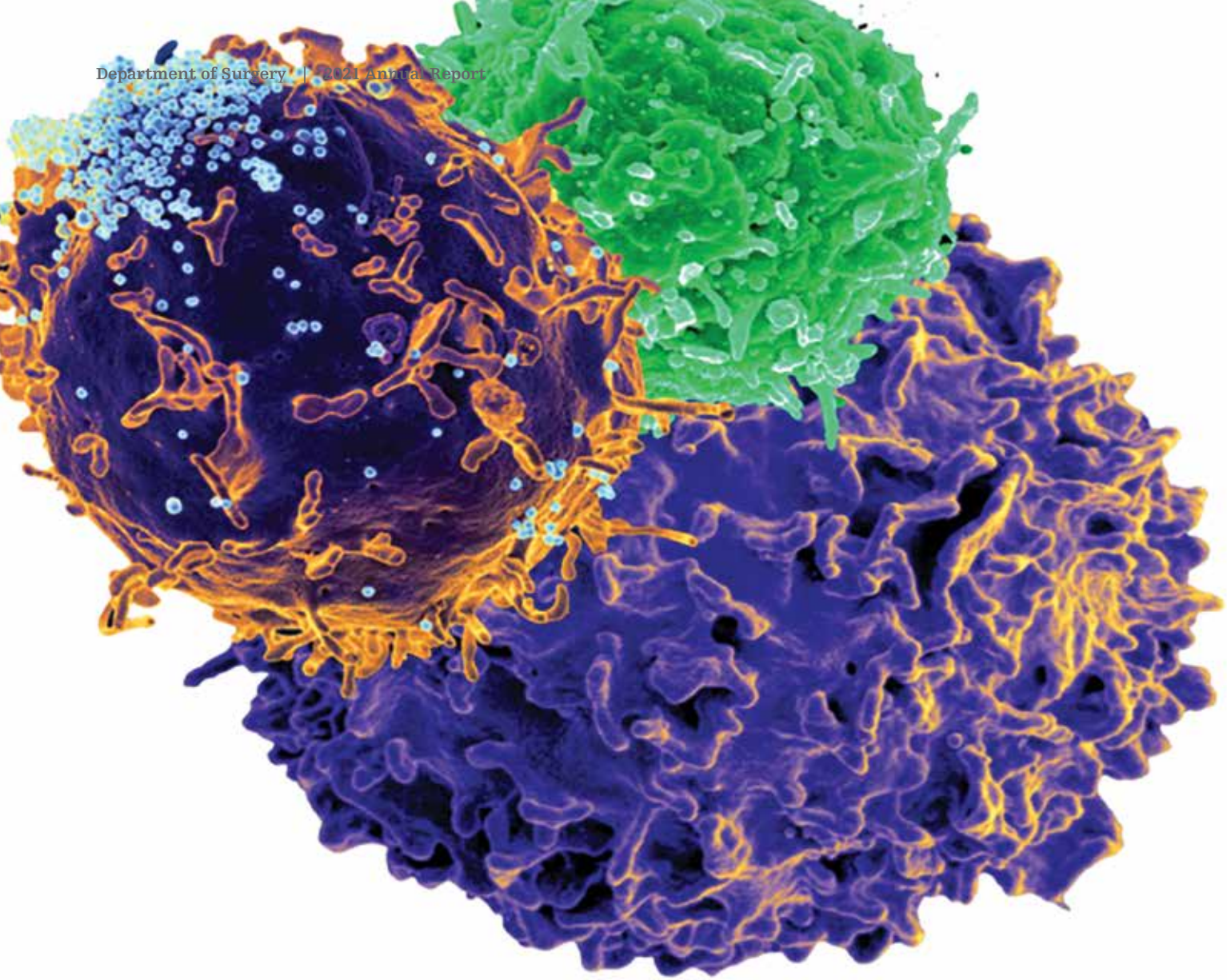
One such program is the Living Donor Kidney Program through the National Kidney Registry. Meera Gupta, MD, assistant professor of surgery and transplant surgeon, serves as the program's surgical director. While deceased donation continues to serve as the primary source, living donation is considered an excellent alternative. A kidney from a living donor can last twice as long and reduce a patient's time on the transplant waiting list from years to weeks.

For patients with kidney disease, transplantation means a life free of time-consuming dialysis. "Regardless of the source of the donated kidney, recipients get a much needed second chance at living a happy and healthy life," Gupta said.

The center joined a growing list of U.S. programs introducing a hepatitis C organ donor program. New treatment options for hepatitis C produce cure rates of 95 percent or greater. Now, end-stage renal disease patients, who do not have the infection, can give informed consent to receive an organ from a hepatitis C donor. Recipients can be treated for hep C after a successful transplant. This is good news for patients who have had long waits for matching organs.

"There is an understanding that the patient will inherit hepatitis C with the organ," Gedaly said. "But soon after their recovery from transplant surgery, they undergo treatment for the hep C that has an excellent rate of success." This enhances the donor pool, allowing use of good-quality organs that would have otherwise been discarded and significantly shortens transplant wait times.

The center also performed UK HealthCare's first transplant in an HIV patient with end-stage renal disease.



ADVANCING RESEARCH **TO REDUCE ORGAN REJECTION**

The UK Transplant Center is one of only seven research facilities in the country testing a regulatory T (Treg) cell-based immunotherapy protocol aimed at reducing rejection of solid organ transplants.

Francesc Marti, PhD, associate professor in the Department of Surgery divisions of Transplantation and Research, is leading investigations at the University of Kentucky.

Treg cells are a type of white blood cell essential for the proper response of the human immune system, as they inhibit the reaction of other white blood cells against unwanted targets. They are critical in preventing organ transplant rejection and autoimmune diseases, and their activity changes a lot in conditions such as obesity and cancer.

In a Novartis-funded study, currently in phase I/II, it is hoped transplanted organ tolerance can be induced by using the patient's own Treg cells as a defense mechanism against rejection. If so, it may be possible to reduce reliance on drug induced immunosuppression and damaging side effects, Marti said.

"The research program in our laboratory focuses on the cellular and molecular mechanisms controlling the development, activation and stability of Treg cells," Marti said. In the last four years, the lab has authored 16 peer-reviewed manuscripts and filed two patent applications.

TRANSPLANTATION FACULTY

Roberto Gedaly, MD, FACS
Division Chief; Director of the Transplant Academic Service Line

Alexandre Ancheta, MD

Meera Gupta, MD, FACS
Surgical Director, Kidney Transplant Program

Malay Shah, MD, FACS
Surgical Director, Liver Transplant Program

NEW FACULTY 2019-2020

Siddharth Desai, MD

National Kidney Registry

To pair more transplant patients with matches from living organ donors, the UK Transplant Center began participating in the National Kidney Registry (NKR).

When a living donor volunteers to give a kidney to a family member or a close friend, the organ isn't always a match. However, if willing, the donor can participate in this national exchange program. The database will conduct a national search for potential matches for the donor while simultaneously searching for donors who match with their loved one. Using the database can create chains of matches across the country.

"Every year we try to do better than the previous year expanding the possibilities with new approaches for patients with end-stage kidney disease," said Roberto Gedaly, MD, division chief of Transplantation.

DIVISIONS

VASCULAR & ENDOVASCULAR SURGERY

For patients with arterial and venous disease, UK HealthCare's vascular and endovascular surgery experts offer the full spectrum of diagnostic, endovascular and surgical procedures. UK faculty developed and pioneered a one-of-a-kind technique to treat occlusive disease. The division's clinicians perform a variety of innovative procedures, which include endovascular surgery, stenting, vein ablations and venous reconstructive surgery. Faculty also focus on aortic pathology by performing the largest number of complex thoracic, thoracoabdominal and abdominal aortic aneurysms and dissections in Kentucky and surrounding areas. Vascular and endovascular surgeons offer comprehensive care that involves providers from other specialties when needed, such as experts from our Vein Clinic and Wound Care Clinic.

1,312
2019 Surgical Cases

1,206
2020 Surgical Cases*

10,832
2019 Clinic Visits

9,181
2020 Clinic Visits*

4
2020 Industry-sponsored, Federal, and NIH grants

$55,063
2020 Contract Income

*Decreased numbers attributed to COVID-19 pandemic and its impact on healthcare, globally.

Alan Daugherty, PhD, (left), Mary Sheppard, MD, (middle) and David Minion, MD, (right) are leaders of the newly established Saha Aortic Center, which was made possible by a gift from the Saha Foundation.

SAHA FOUNDATION **BOOSTS AORTIC RESEARCH**

A new research center focused on aortic disease has been established at the University of Kentucky thanks to a gift from the Saha Foundation.

Housed in UK's Biomedical Biological Science Research Building, the Saha Aortic Center will promote research and education to advance clinical care for disease of the aorta.

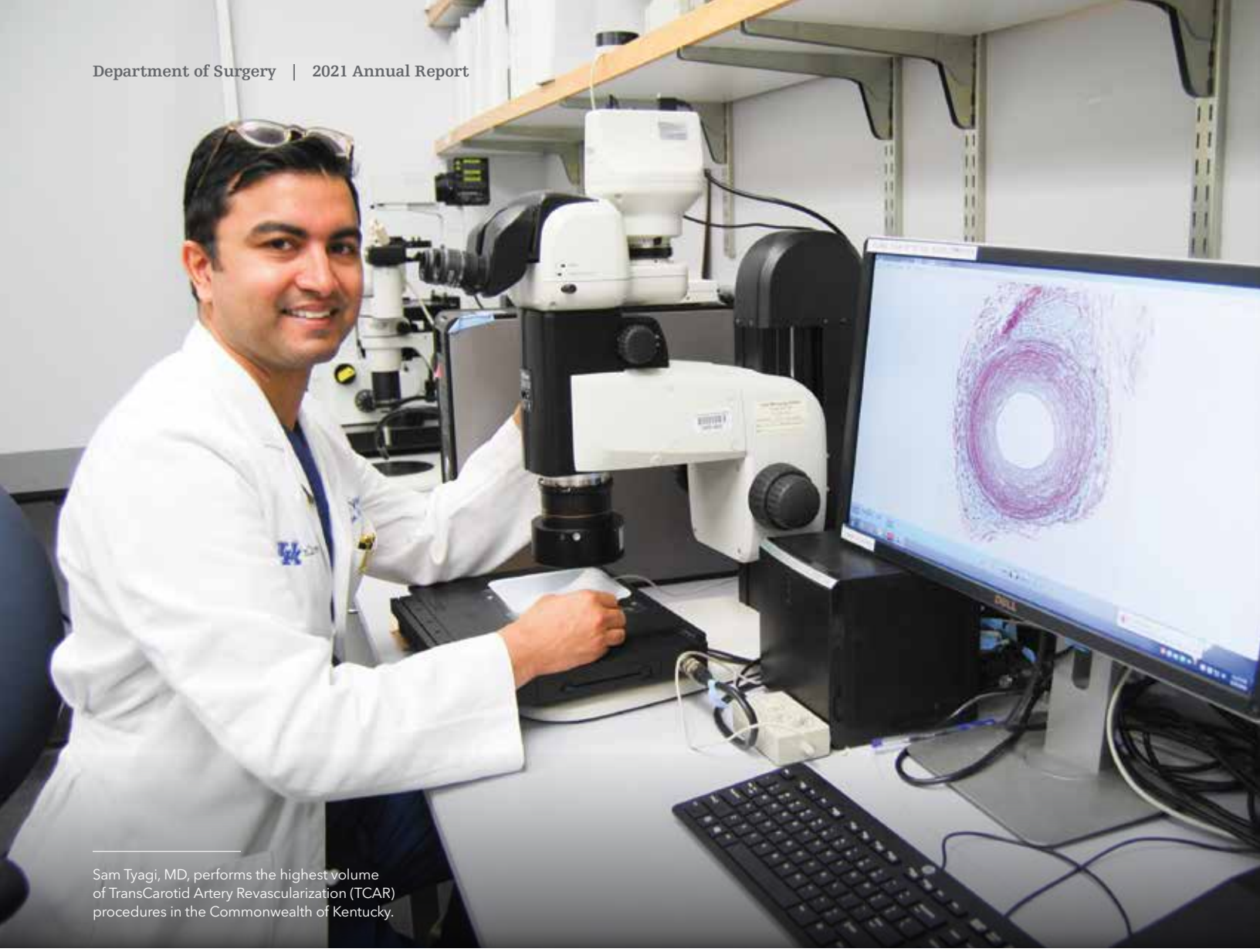
The center's co-directors are: Alan Daugherty, PhD, chair of the Department of Physiology and director of the Saha Cardiovascular Research Center in the UK College of Medicine; David Minion, MD, program director and professor of surgery; and Mary Sheppard, MD, assistant professor of family and community medicine, surgery and physiology.

"Dr. Saha has devoted a lifetime of service to the health care needs of Kentucky. The generous gift attests to his and his family's passion and dedication to our Commonwealth," Minion said. "I am honored to be a part of this exciting initiative."

Sheppard founded the UK Aortic Clinic and performs NIH-funded research on Marfan Syndrome and genetically based aortic disease. She works closely with vascular surgeons to provide a transdisciplinary team approach for managing patient's aortic disease.

"This donation from the Saha Foundation is a tremendous gift to the people of Kentucky, as they will not need to leave the state to access the most cutting-edge care for aortic disease," Sheppard said. "We have one of the largest groups of basic scientists in the world who do research on aortic disease. By facilitating collaboration with our physicians, this gift will position UK to be a premier center for the treatment of people with aortic disease throughout the world."

The Saha Foundation was established in 1999 by Sibu and Becky Saha to promote research and education on cardiovascular disease in Kentucky. Following a distinguished career in private practice, Saha joined the UK College of Medicine faculty in 2002 as a professor of surgery in the Division of Cardiothoracic Surgery. Rania Saha, the couple's daughter, was recently named as president of the Saha Foundation. Rania, who resides in New York City, is an accomplished motion graphics artist and designer.



Sam Tyagi, MD, performs the highest volume of TransCarotid Artery Revascularization (TCAR) procedures in the Commonwealth of Kentucky.

STEMMING STROKE RISK WITH A **LESS-INVASIVE APPROACH**

Carotid artery disease, the buildup of plaque in one or both arteries in the neck, is one of the major causes of stroke in the U.S. With stroke ranking high on Kentucky's leading causes of death, it's no wonder the team at UK Gill Heart & Vascular Institute was among the first in Kentucky to offer TransCarotid Artery Revascularization (TCAR).

TCAR is a minimally invasive, safe approach for high-risk surgical patients who need carotid treatment. Other traditional stenting procedures currently performed have a stroke rate four times higher than TCAR. That's too great of a risk for some of the 400,000-plus people diagnosed with the disease every year in the United States.

"TCAR utilizes the benefits of both open surgery and stenting to achieve the lowest perioperative stroke and complication rates ever recorded," said Sam Tyagi, MD, assistant professor of surgery and vascular surgeon, who performs the highest volume of TCAR procedures in the state.

TCAR is unique because blood flow is temporarily reversed so that small bits of plaque can break off and divert away from the brain, thus preventing a stroke. Then, a stent is placed inside the artery to stabilize the plaque. This less invasive method has very low rates of cranial nerve injury and myocardial infarction due to a minimal incision near the clavicle and the transcarotid approach.

"In the end, patients have less pain, smaller scars and a much faster recovery time," he said.

VASCULAR & ENDOVASCULAR FACULTY

Eleftherios Xenos, MD, PhD, RVT, FACS
Division Chief; Associate Chief Quality Officer of UK HealthCare

Joseph Bobadilla, MD, FACS

Eric Endean, MD, FACS

Mary B. Sheppard, MD
Co-Director Saha Aortic Center

David Minion, MD, FACS
Co-Director, Saha Aortic Center; Program Director of Vascular and Endovascular Fellowship

Sam Tyagi, MD, FACS

NEW FACULTY 2019-2021

Dong Lee, MD

HIGHLIGHTS

Xenos appointed Associate Chief Quality Officer

Eleftherios Xenos, MD, PhD, chief of the Division of Vascular and Endovascular Surgery, was appointed to a new role within UK HealthCare's physician leadership structure to bridge the gap between quality and documentation efforts as associate chief quality officer and chief medical revenue officer. Xenos will build and grow the teams that will improve clinical documentation efforts to appropriately capture the acuity of care UK HealthCare provides.

Tyagi receives the 2020 Early Career Faculty Research Award

Sam Tyagi, MD, assistant professor of surgery, was named recipient of the 2020 Early Career Faculty Research Award from the Vascular and Endovascular Surgery Society (VESS). Tyagi's research proposal, "The Effect of Phosphodiasterase Inhibitors on BAPN-Induced Aortic Dissection," was recognized for its potential to "understand the influence of various medication effects on changes in the pathology of [aortic] aneurysms."

KEY PERSONNEL

LEADERSHIP

William B. Inabnet III, MD, MHA, FACS
The Johnston-Wright Endowed Professor and Chair of Surgery

Patrick McGrath, MD, FACS
Vice-Chair for Clinical Affairs

Mark Evers, MD, FACS
Vice-Chair for Research; Director, Markey Cancer Center

Erik Q. Ballert, MD, FACS
Vice-Chair for VA Affairs; Chief of Surgical Services, Lexington VA Medical Center

Sandra Beck, MD, FACS, FASCRS
Vice-Chair for Education; Colon and Rectal Surgery Division Chief; Program Director, General Surgery Residency

David Drake, MD
Director, Hand Surgery Fellowship

Shari Meyerson, MD, M.Ed.
Director, Cardiothoracic Surgery Integrated 6-Year Residency Program & Cardiothoracic Surgery Fellowship Program

David Minion, MD, FACS
Director, Vascular and Endovascular Fellowship

Jitesh Patel, MD, FASCRS, FACS
Director, Colon & Rectal Surgery Fellowship; Associate Program Director, General Surgery Residency

Jessica Reynolds, MD
Director, Critical Care Surgery Fellowship

Lesley Wong, MD, FACS
Director, Plastic & Reconstructive Surgery Program

Melissa R. Newcomb, MD, FACS
Assistant Dean for Assessment and Evaluation

Prakash Pandalai, MD
Co-Chair, Surgery Task Force on Diversity, Equity, and Inclusion

Crystal F. Totten, MD
Co-Chair, Surgery Task Force on Diversity, Equity, and Inclusion

David Worhunsky, MD
Chief Wellness Officer

ADMINISTRATION

Shawn Coffey
Department Clinical Administrator

Dijana Zaimovic
Department Associate Administrator

Angie Dalton-Tibbetts
Ambulatory Clinics Director

KEY PERSONNEL

RESIDENTS & FELLOWS 2021-22

RESIDENTS

General Surgery Residency

PGY 1
Carly Celebrezze, MD
Morgan A. Gongola, MD
Mackenzie Humphrey, MD
Kyle Ridlen, MD
Marina Robson Chase, MD
Morgan Sindall, MD
Andrew Whipkey, MD
Omar Zaki, MD

PGY 2
Madeline Anderson, DO
Elizabeth Bittner, MD
Amber James, MD
Katherine "Katie" McClain, MD
Anna Reagan, MD
Reagan Stafford, MD
William "Will" Witt, MD
Daniel Yackzan, MD

Preliminary PGY 2
Jeremy Llaniguez, MD

PGY 3
Charles Campbell, DO
Alexandra Cocca, MD
Satya "Sai" Dalavayi, MD
Erin McAtee, DO
Hannah McDonald, MD
Kyle Murphy, MD
Gustavo Ortega, MD
Wesley Wilt, MD

PGY 4
Erika Almodovar, MD
Robert-Marlo Bautista, MD
Roger Michael Cournoyer, MD
Vashisht Madabushi, MD
Paul Salazar, MD
Victoria "Tori" Wagner, MD
Matthew Wright, MBBS

PGY 5 (Chiefs)
Roberto Aru, MD
Travis Hughes, MD
Robert King, MD
Kathryn "Katie" Kraft, MD
Amy Tefft, MD
Sam Walling, MD
Jingkun Wang, MD

General Surgery Research Year

Jennifer Castle, MD
Megan Harper, MD
Brittany Levy, MD

Preliminary Interns

Allison Brown, MD
Mitchell Cornforth, DO
Stephen Ford, DO
Noah Jordan, DO
Tejas Nandurkar, MD
Evan Nix, MD
Dmytro Orel, MD
Aaron Overbeck, DO
Gabriele Pate, MD
Brooks Platt, MD
Afzal Shakir, MD
Ian Stone, DO
Kindra Sullivan, MD
Sara Taege, MD
Ato Wallace, MD
Robert Wilson, MD
Jenna Yamamoto, MD

Cardiothoracic Surgery Integrated 6-Year Residency

PGY 1
Alan Parr, MD

PGY 2
Andrew Gorton, MD

PGY 3
Andrew Bishop, MD

PGY 4
Thomas Marsden, MD

PGY 5
Rebecca Phillip, MD

PGY 6 (Chiefs)
Peter M. Rodgers-Fischl, MD

Plastic and Reconstructive Surgery Integrated 6-Year Residency

PGY 1
Sydney Char, MD
E. Abi Recktenwald, MD

PGY 2
Evan Lynch, MD, PhD
Garrett Minor, MD

PGY 3
Tucker Kornegay, MD
Maggie Wetzel, MD

PGY 4
Miriam Henry, MD
Ahmed J. Al Bayati, MD

PGY 5
Chris Howell, MD
Chris Kubajak, MD

PGY 6 (Chiefs)
Alisha Bonaroti, MD
Bud Sauer, MD

FELLOWS

Cardiothoracic Surgery Fellowship

PGY6
Sheel Patel, DO

Colon and Rectal Surgery Fellowship

John Frankel, MD

Hand Surgery Fellow

Jessica Vavra, MD

Surgical Critical Care Fellowship

Daniel Bolton, MD
Christine Dahlhausen, MD

Vascular Surgery Fellowship

PGY 6
Lauren Grimsley, MD

PGY 7
Kaleb Kohler, MD

IN MEMORIAM: **WARD O. GRIFFEN, MD, PHD**

Ward O. Griffen, MD, PhD, former chair of the UK Department of Surgery from 1968-1984 and a giant in the world of American surgery, died in July 2020 at age 92. As an advocate of a model of academic surgery that emphasized patient care and compensation based on clinical as well as research activity, Griffen saw clinical volume in the surgery department increase twofold under his leadership.

He had a tremendous impact on UK surgery residents."Griffen taught us that surgeons must have empathy for our patients," said Dr. Richard Furman, founder of World Medical Missions and a UK resident during Griffen's tenure as chair. "He taught me how to have a heart for what I'm doing, and that became very important in my belief in global outreach."

Griffen also contributed significantly to the field of bariatric surgery. In 1977, he refined the Roux-en-Y gastric bypass procedure. In 1984, Griffen became executive director of the American Board of Surgery, a position he held for 10 years.

He is survived by his wife, Margaret Mary "Pudge" Griffen, and seven children, including UK General Surgery alum Dr. Margaret Mary Griffen.

LOOKING BACK AT **THE POWER OF PHILANTHROPY**

Honoring a beloved physician educator

Richard W. Schwartz, MD, was considered a true personification of academic medicine's "triple-threat" mission. He was an accomplished investigator, securing significant research funding and authoring more than 200 publications. As a superb gastrointestinal and hernia surgeon, Schwartz's practice was expansive, as he cared for patients at both UK and Lexington VA Medical Center.

Schwartz was a remarkable teacher and passionate about training medical students and residents. Year after year, he was awarded local and national teaching awards. He served as visiting professor at more than 40 national and international medical centers, and held leadership roles within renowned organizations, including the American College of Surgeons and Association for Surgical Education, as a champion for surgical training. It is only fitting that the Department of Surgery's lifetime achievement award now bears his name.

His beloved wife, Janet Schwartz Evans, and colleagues Andrew Bernard, MD, and David Sloan, MD, were resolute to memorialize Schwartz in perpetuity following his passing. Their lead gifts established the Richard W. Schwartz Memorial Lecture, which fosters an opportunity for educators and learners alike to congregate, learn and grow as surgeons. Alumni continue to contribute toward the lectureship, which has far exceeded its initial goal of $100,000.

In 1989, early in his tenure as Department of Surgery faculty, Richard Schwartz, MD, (pictured here) was awarded the UK Alumni Association's Great Teacher Award, a testament to his dedication to furthering surgical education, research and care. Only a handful – of 100s – of faculty are selected for this honor each year.

This year's lecture is scheduled for Nov. 5 and all are welcome to attend. Please contact **Linda Silvestri** at **lsilv2@uky.edu** for additional details.

Ball Family Gift Transformed Patient and Family Experience

At a time of significant growth for UK HealthCare, Mira and Don Ball made a seminal gift toward construction of Pavilion A at UK Albert B. Chandler Hospital — a 12-story, 1.2 million-square foot patient care facility. Mira and Don founded Lexington-based Ball Homes and have demonstrated unwavering support for their alma mater, UK. Mira is a longtime member of the UK Board of Trustees University HealthCare Committee and was the first woman to serve as its chair.

In appreciation of their generosity, one of Pavilion A's most noteworthy spaces was named in their honor. The Don and Mira Ball Surgery Waiting area is a comfortable, welcoming space designed to meet the needs of patient families. Large windows provide natural light and the space houses a uniquely Kentucky art collection. Electronic displays and pagers update family members as patients progress through surgery. Staff are on hand to address concerns and answer questions. Private consultation rooms allow physicians and surgical staff to discuss surgery outcomes.

Philanthropic support is vital to our continued success and serves as a key accelerator for pillar-based initiatives. To learn more about giving opportunities associated with our pillars, contact **Lindsey Clem**, director of philanthropy at **jlclem4@uky.edu** or make a gift using the QR code.

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