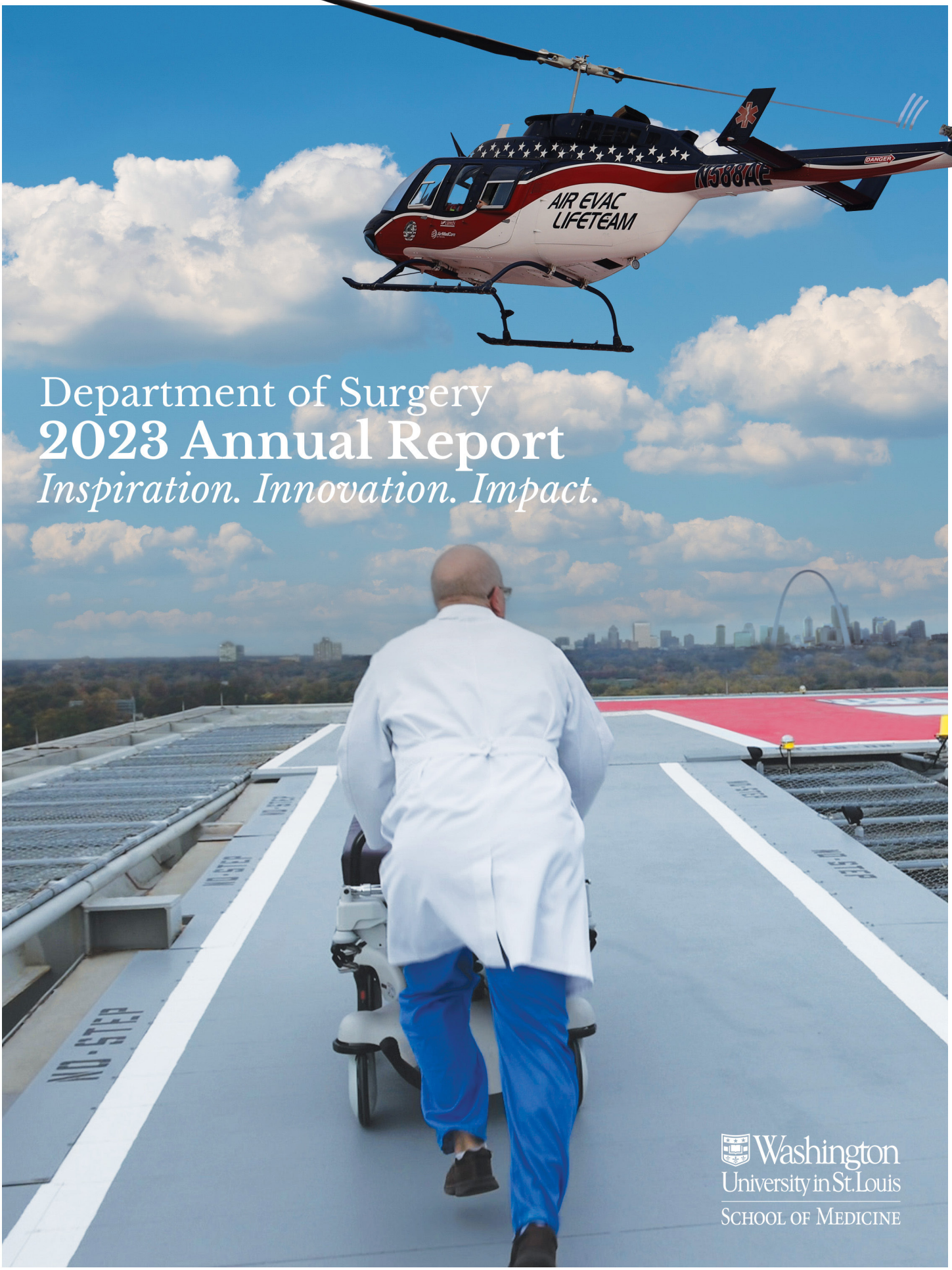


Department of Surgery

2023 Annual Report

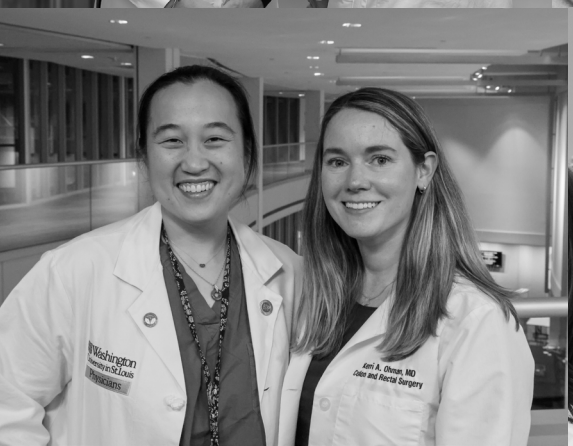
Inspiration. Innovation. Impact.

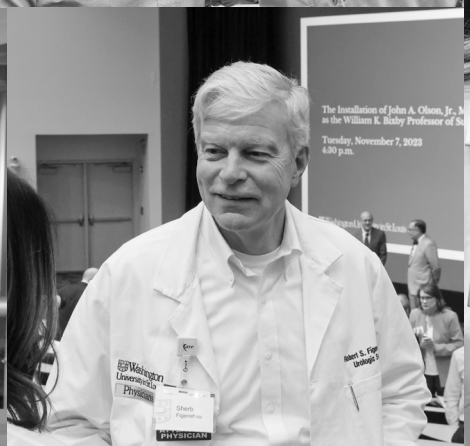
Washington University in St. Louis
School of Medicine


School of Medicine


Children's


AUDITORIUM
Washington University in St. Louis
Physicians
Justin Sacks


Washington University in St. Louis
Physicians


The Installation of John A. Olson, Jr.
Tuesday, November 7, 2023
4:30 p.m.
Washington University in St. Louis
Physicians
PHYSICIAN

Each year, I ask myself and our faculty: What is our business? Reflecting on this question serves as an important reminder of the motivating factors that drive us as academic surgeons and the impact of our work. Many would say that, as surgeons, we are in the health care business. While this is certainly true—after all, we spend a significant portion of our time in the operating room, and surgery is the primary source of our revenue—it does not tell the whole story. For a more complete picture of our business, I look to our tripartite mission: applying knowledge through clinical care, imparting knowledge through training programs, and discovering knowledge through research activities. Our mission makes it clear: We are in the knowledge business.

What does it mean to be in the knowledge business? Our purpose is to improve the health and wellbeing of the patients we serve, but also, through our research and education, to impact the health of patients we will never meet.

We have made great strides in the past year. Through partnership with BJC HealthCare, we have expanded to new clinical locations to provide top quality care to more patients within communities across our region. Investigators in the Department of Surgery published nearly 750 articles and saw a 20% increase in research funding, signaling the rich environment of discovery in our laboratories. We established a program of cadaveric perfusion to enhance surgical training and the development of novel techniques. And, vitally important, we increased the diversity and equity of our training programs; in fact, half of the trainees in our general surgery residency this year are women, and a high percentage are from populations that are underrepresented in medicine.

I am proud to announce several key faculty members who have been appointed to new leadership positions within the department. Paul Wise, MD, who has led the general surgery residency program for the past decade, now oversees all training programs as vice chair for education. Sam Bhayani, MD, has been named vice chair for clinical operations in the Department of Surgery, a role that will complement his position as chief medical officer of Washington University Physicians. Maria B. Majella Doyle, MD, has been appointed the department's executive vice chair. Each of these surgical leaders has an established history of excellence at Washington University, and their future contributions will be essential to our growth and continued success. Additionally, I am pleased to introduce Colin Martin, MD, as our new chief of pediatric surgery and surgeon-in-chief at St. Louis Children's Hospital. Brad Warner, MD, who led the division since 2007, will remain on the faculty and continue caring for patients, mentoring trainees and conducting research.

As we look forward to another year of academic surgery, I am confident that the Department of Surgery at Washington University School of Medicine in St. Louis will remain a pioneer in the knowledge business. We will improve the health of patients locally and across the country through advances in patient safety; we will develop new innovations in surgical sciences; we will train the best and the brightest future surgeons in our residency and fellowship programs. All of this will only be possible through our continued commitment to applying, imparting and discovering knowledge.

John Olson Jr., MD, PhD
William K. Bixby Professor and Chair
Department of Surgery
Washington University School of Medicine

WASHU SURGERY NEWS

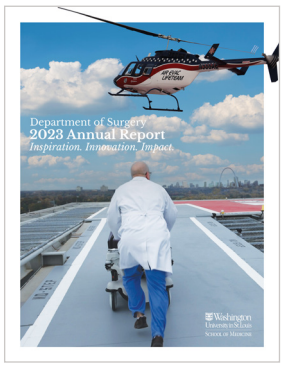
Adeel Khan, MD, MPH.

Keep Up With WashU Surgery News

Some of the incredible stories from the department in local and national headlines.

▶ *To view the WashU Surgery News online, scan the QR code or visit surgery.wustl.edu/news/.*

INSIDE THE REPORT



About the Cover

Washington University acute and critical care surgeons provide the highest level of trauma care at the Barnes-Jewish Hospital ACS Level 1 verified trauma center. Pictured on the cover is Douglas Schuerer, MD, trauma center director.

Divisions & Sections

Features

Muhammad Faraz Masood, MD.

a year in review

JANUARY

Lung transplant team celebrates 2000th transplant

The Lung Transplant Program at Washington University School of Medicine and Barnes-Jewish Hospital, in its continued advancement of transplant care and research, celebrated its 2000th lung transplant. The program became the fourth lung transplant program in the U.S. to meet the milestone and is one of few programs worldwide to accomplish the feat.

From left: Ramsey Hachem, MD, Daniel Kreisel, MD, PhD, and Varun Puri, MD, MSCI.

FEBRUARY

Research on thoracic outlet syndrome reveals durable treatment options

Vascular surgeon and nationally recognized thoracic outlet syndrome (TOS) expert Robert Thompson, MD, and his research team published a study in the Journal of Vascular Surgery that concluded paraclavicular decompression, external venolysis and selective axillary-subclavian vein reconstruction based on intraoperative venography can provide successful and durable treatment for more than 90% of patients with venous TOS.

Robert Thompson, MD.

MARCH

Kaneko installed as Shoenberg Chair in Cardiovascular Disease

The Washington University School of Medicine community celebrates the installation of Tsuyoshi Kaneko, MD, section chief of cardiac surgery, as the John M. Shoenberg Chair in Cardiovascular Disease. The generosity of the Shoenberg family, the Shoenberg Foundation, and the Foundation for Barnes-Jewish Hospital provides continued, vital support to the health care community in St. Louis.

Tsuyoshi Kaneko, MD.

JULY

First robotic liver transplant in U.S. performed by WashU surgeons

Transplant surgeon Adeel Khan, MD, and his trailblazing surgical team performed the first robotic liver transplant in the United States at Barnes-Jewish Hospital. The patient, a man in his 60s who needed the transplant due to liver cancer and hepatitis C-related cirrhosis, is doing well and resumed normal activities seven weeks after his transplant.

Adeel Khan, MD.

AUGUST

Bhayani named vice chair of clinical operations

Sam Bhayani, MD, who has held numerous leadership positions at the medical school and across the BJC HealthCare system, was appointed vice chair of clinical operations in the Department of Surgery. Bhayani also serves as chief medical officer of Washington University Physicians.

Sam Bhayani, MD.

SEPTEMBER

WISE Education Fellow Gerull awarded Intuitive Surgical grant

Washington University received a $75,000 grant from Intuitive Surgical, maker of the da Vinci surgical systems, to support the research of Will Gerull, MD. The Intuitive Technology Research Grant will fund Gerull's investigations into how robotic learning can be used to enhance surgical training during his time as ACS-AEI Education Fellow at the Washington University Institute for Surgical Education (WISE).

Will Gerull, MD.

APRIL

Aft installed as inaugural Jeffrey F. Moley Professor of Endocrine and Oncology Surgery

Surgical oncologist and breast cancer specialist Rebecca Aft, MD, PhD, was formally installed as the first Jeffrey F. Moley Professor of Endocrine and Oncology Surgery. A student under Moley, Aft carries his legacy for her work in surgical oncology and in her position at the St. Louis Veterans Affairs Hospital, a position Moley himself held and cherished.

From left: David Perlmutter, MD, Rebecca Aft, MD, PhD and John Olson Jr., MD, PhD.

MAY

Risk markers for early-onset colorectal cancer

In a study published in the May edition of the Journal of the National Cancer Institute, Yin Cao, ScD, Matthew Mutch, MD, and general surgery resident Ebunoluwa Otegbeye, MD, found four important signs and symptoms that signal an elevated risk of early-onset colorectal cancer. These red flags may be key to earlier detection and diagnosis of early-onset colorectal cancer among young adults.

Yin Cao, ScD.

JUNE

Martin selected to lead Division of Pediatric Surgery

Colin Martin, MD, a specialist in intestinal rehabilitation surgery and an advocate for diversity, equity and inclusion in surgery, joins the Department of Surgery as the new chief of the Division of Pediatric Surgery and pediatric surgeon-in-chief at St. Louis Children's Hospital.

Colin Martin, MD.

OCTOBER

Physician-scientists receive prestigious SPORE grant for pancreatic cancer research

Ryan Fields, MD, William Hawkins, MD, and medical oncologist David DeNardo, PhD, received prestigious Specialized Programs of Research Excellence (SPORE) grant from the National Cancer Institute of the National Institutes of Health. The grant provides $10.9 million to support research and clinical trials for the development of new therapies for pancreatic ductal adenocarcinoma, the deadliest form of pancreatic cancer.

Ryan Fields, MD.

NOVEMBER

Jiang receives WashU Gap Fund Award

Shu (Joy) Jiang, PhD, MSc, recently received an award from the Washington University in St. Louis Gap Fund. The award will enable Jiang and Graham Colditz, MD, DrPH, to develop technology for identifying pathologic characteristics in histopathology images.

Shu (Joy) Jiang, PhD, MSc

DECEMBER

Nerve Day unites plastic, orthopedic, nerve surgeons

The Division of Plastic and Reconstructive Surgery joined forces with the Department of Orthopedic Surgery and Department of Neurosurgery for their annual Nerve Day simulation activities. Fellows and faculty members in the clinical areas performed simulations of supraclavicular and infraclavicular dissections and distal nerve transfers in the WISE Center.

Mitchell Pet, MD.

The Department of Surgery
By the Numbers

211
Faculty

13
Divisions/Sections

121
Residents

39
Fellows

$33,260,602
Research funding

741
Publications

215,848
Visits

42,420
Operating room cases

Department at a Glance

The Department of Surgery at Washington University School of Medicine is a multidisciplinary organization with a rich history of innovation and collaboration. Faculty and trainees from various specialties work with staff to achieve excellence in patient care, research, education, diversity and health equity.

The department's wide range of specialties is represented by its divisions and sections.

As clinicians, Washington University surgeons provide care within five divisions: Cardiothoracic Surgery, General Surgery, Pediatric Surgery, Plastic and Reconstructive Surgery and Urologic Surgery.

Within the Division of Cardiothoracic Surgery, there are three sections: Cardiac Surgery, Thoracic Surgery and Pediatric Cardiothoracic Surgery.

The Division of General Surgery has six sections: Acute and Critical Care Surgery, Colon and Rectal Surgery, Hepatobiliary-Pancreatic & GI Surgery, Minimally Invasive Surgery, Surgical Oncology, Transplant Surgery and Vascular Surgery.

These divisions also serve as referral centers for their respective specialties. Surgeons treat patients at five Barnes-Jewish Hospital locations: St. Louis Children's Hospital, five Siteman Cancer Center locations: Christian Hospital,

Memorial Hospital Shiloh, Progress West Hospital, Alton Memorial Hospital and other locations across Missouri and Illinois.* Clinicians within the department are dedicated to serving the St. Louis community and beyond.

Another division, dedicated to Public Health Sciences, contributes to research, education and outreach in its field with the goals of preventing disease, promoting health equity and improving clinical care and outcomes.

Faculty members train residents and fellows in every surgical specialty represented in the department. In research, the department consistently ranks among the top academic surgery departments in annual NIH, non-federal and corporate-supported grants.

The department is led by John Olson Jr., MD, PhD, chair and William K. Bixby Professor of Surgery. Following the nearly quarter century of outstanding leadership from Timothy Eberlein, MD, Olson builds on the legacy of excellence within the department – a legacy that was established by a long line of renowned surgeons and is continued through its high standards today.

Washington University surgeons provide comprehensive surgical and medical care. Patients receive the expertise and personalized treatment to achieve their best outcomes, and residents and fellows receive world-class training that prepares them for successful careers in surgery.

**Clinical services in Illinois provided by Washington University Physicians in Illinois, Inc.*

& DIVISIONS SECTIONS

DIVISION OF CARDIOTHORACIC SURGERY

- SECTION OF CARDIAC SURGERY
- SECTION OF THORACIC SURGERY
- SECTION OF PEDIATRIC CARDIOTHORACIC SURGERY

DIVISION OF GENERAL SURGERY

- SECTION OF ACUTE AND CRITICAL CARE SURGERY
- SECTION OF COLON AND RECTAL SURGERY
- SECTION OF HEPATOBILIARY-PANCREATIC & GI SURGERY
- SECTION OF MINIMALLY INVASIVE SURGERY
- SECTION OF SURGICAL ONCOLOGY
- SECTION OF TRANSPLANT SURGERY
- SECTION OF VASCULAR SURGERY

DIVISION OF PEDIATRIC SURGERY

DIVISION OF PLASTIC & RECONSTRUCTIVE SURGERY

DIVISION OF PUBLIC HEALTH SCIENCES

DIVISION OF UROLOGIC SURGERY

Section of Cardiac Surgery

Our cardiac surgeons are widely recognized as national leaders. As part of the highest-ranked heart program in Missouri by U.S. News & World Report, they perform adult cardiac surgeries and foster innovation in the field of cardiac medicine. Working with cardiologists, vascular surgeons, anesthesiologists, intensivists and a highly qualified nursing staff, cardiac surgeons offer the latest advances in technology and innovative therapies. They employ practices supported by scientific evidence to achieve the best possible outcomes, and strive to further advance the field through their dedication to quality research and education.

Our Year in Numbers

3,915
operating room cases

6,500
visits

12
faculty

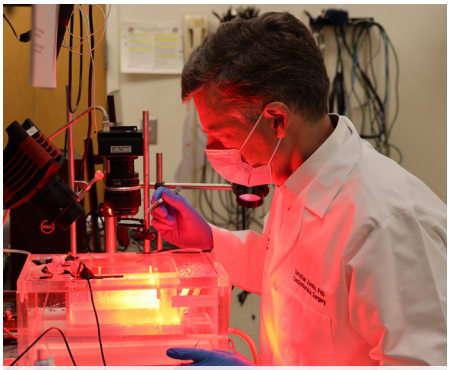
117
clinical research studies

$2,129,999
research funding

Highlights

Shuddhadeb Ray, MD, MPHS.

Ralph Damiano Jr., MD.



Christian Zemlin, PhD, MSc.

Clinical

Washington University School of Medicine, in partnership with Barnes-Jewish Hospital, leads the nation in arrhythmia, minimally invasive and aortic surgery for adult cardiac care. The Structural Heart Disease program within the Cardiac Procedure Center performs transcatheter aortic valve replacement (TAVR) and percutaneous mitral valve repair (MitraClip), using the latest techniques and technological advancements to produce the most favorable outcomes, tailored for patients. The Advanced Heart Failure and Transplant Cardiology Fellowship program is focused on providing care for patients using the latest techniques, including Impella pump implantation for heart recovery and revascularization. The Hypertrophic Cardiomyopathy Center provides comprehensive care to patients diagnosed with hypertrophic cardiomyopathy (HCM).

Education

The Section of Cardiac Surgery was proud to host Taras Lysyy, MD, MCh, the inaugural Matthew Gerdisch Arrhythmia Fellowship recipient from the American Association for Thoracic Surgery (AATS). Lysyy studied under the mentorship of **Ralph Damiano Jr.**, MD, to improve long-term outcomes and durability for the Cox-Maze IV procedure, who pioneered this less invasive variation of the procedure. “He comes to us with excellent training and experience, and I have no doubt that he will be a future leader in this area,” says Damiano. “We hope to provide him a strong foundation for contribution in the field.” Reports from researchers who have taken part in the investigation attest to the safety and effectiveness of the procedure.

Research

Under the leadership and direction of **Ralph Damiano Jr.**, MD, and **Christian Zemlin**, PhD, MSc, their research team receive funding through an R01 Grant to study treatments for cardiac arrhythmias. The project seeks to identify the characteristics of chronic structural, electrical and mechanical remodeling of the atria in chronic mitral regurgitation (MR) in order to optimize and improve the surgical treatment of patients with both MR and atrial fibrillation. Jakraphan Yu, MD, a researcher working in the Damiano/Zemlin lab, won the Kouchoukos Research Day competition for his presentation titled “Efficacy of a Surgical Cardiac Ablation Clamp using Nanosecond Pulsed Electric Fields: An Acute Porcine Model.”

Tsuyoshi Kaneko, MD.

Expanding Boundaries in Cardiac Surgery

The Section of Cardiac Surgery continues to excel among the top medical centers, while simultaneously prioritizing an inclusive learning and clinical environment for diverse cohorts of researchers, learners and patients.

"Our effort to expand diversity, inclusion, and equity will be critical to our future, and we will continue to support all members of our team as they strive to accomplish their goals of excellence in patient care, teaching, and research," says **Ralph Damiano Jr.**, MD, division chief of cardiothoracic surgery. "We are proud to enjoy a robust and dedicated staff of diverse physicians and researchers, who continue to prove their potential among professional associations in their fields."

The section champions diversity, both in representation among surgeons, as well as in service to the community at large.

Tsuyoshi Kaneko, MD, John M. Shoenberg Chair of Cardiovascular Disease, was named chief of cardiac surgery at Barnes-Jewish Hospital. A rich background of research and clinical leadership at Brigham and Women's Hospital, where he served for over eleven years, buttresses Kaneko's expertise in cardiac surgery. He was awarded a Thoracic Surgeons Residents Association teaching award at the Society of Thoracic Surgeons (STS) annual meeting in 2022 and recently published findings from an investigation into transcatheter mitral valve replacement, as well as an article assessing outcomes of redo surgical mitral valve replacements in comparison to transcatheter mitral valve replacement in patients with failed prostheses. His dedication to his practice is highly tailored to each patient's needs and he promises: "If you come to my practice, I will take care of you as if you were my own family member. We discuss your condition and concerns in-depth and come up with the best plan of care for you."

"Dr. Kaneko is truly a pioneer. He has proved himself as a world leader in cardiothoracic surgery through his clinical skills, his commitment to patient outcomes and his dedication to the education of future surgeons, all of which resonate with our mission at Washington University," says John Olson Jr., MD, PhD, chair of the Department of Surgery.

Martha McGilvray, MD, MSt, MPHS, a PGY-III general surgery resident, won the award for best abstract at the Vivien Thomas Symposium at the STS annual meeting. The symposium is designed to highlight health equity in practice by presenting people who are successfully improving patient outcomes. McGilvray is recognized for her research on racial disparities in the management of ischemic heart disease.

With dedicated study and tailored treatment options, the section's mission is to eliminate health-care disparities based on gender and race discrimination, while celebrating diversity among team members.

Section of Thoracic Surgery

Our thoracic surgeons provide leading-edge respiratory care, research and training. They offer a multitude of treatments including airway surgery, procedures for benign esophageal disease, esophageal and lung cancer surgery, and lung transplantation. Many procedures are performed through minimally invasive techniques, including robotic surgery. Since 1988, the lung transplant program at Barnes-Jewish Hospital has led the country in the advancement of transplant science and remains one of the most active transplant centers worldwide. These surgeons also foster ongoing excellence in the next generation of thoracic surgeons through advanced fellowship training.

Our Year in Numbers

2,011
operating room cases

8,035
visits

11
faculty

430
office procedures

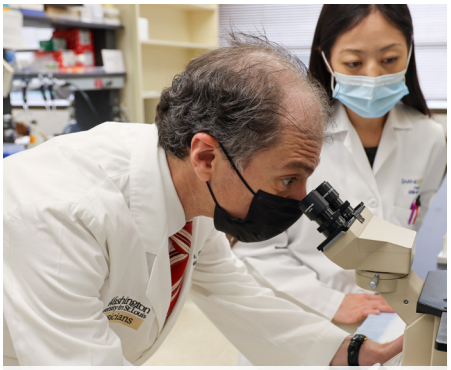
35
clinical research studies

$2,085,206
research funding

Highlights

Bryan Meyers, MD, MPH.

Ruben Nava, MD.



Daniel Kreisel, MD, PhD, left.

Clinical

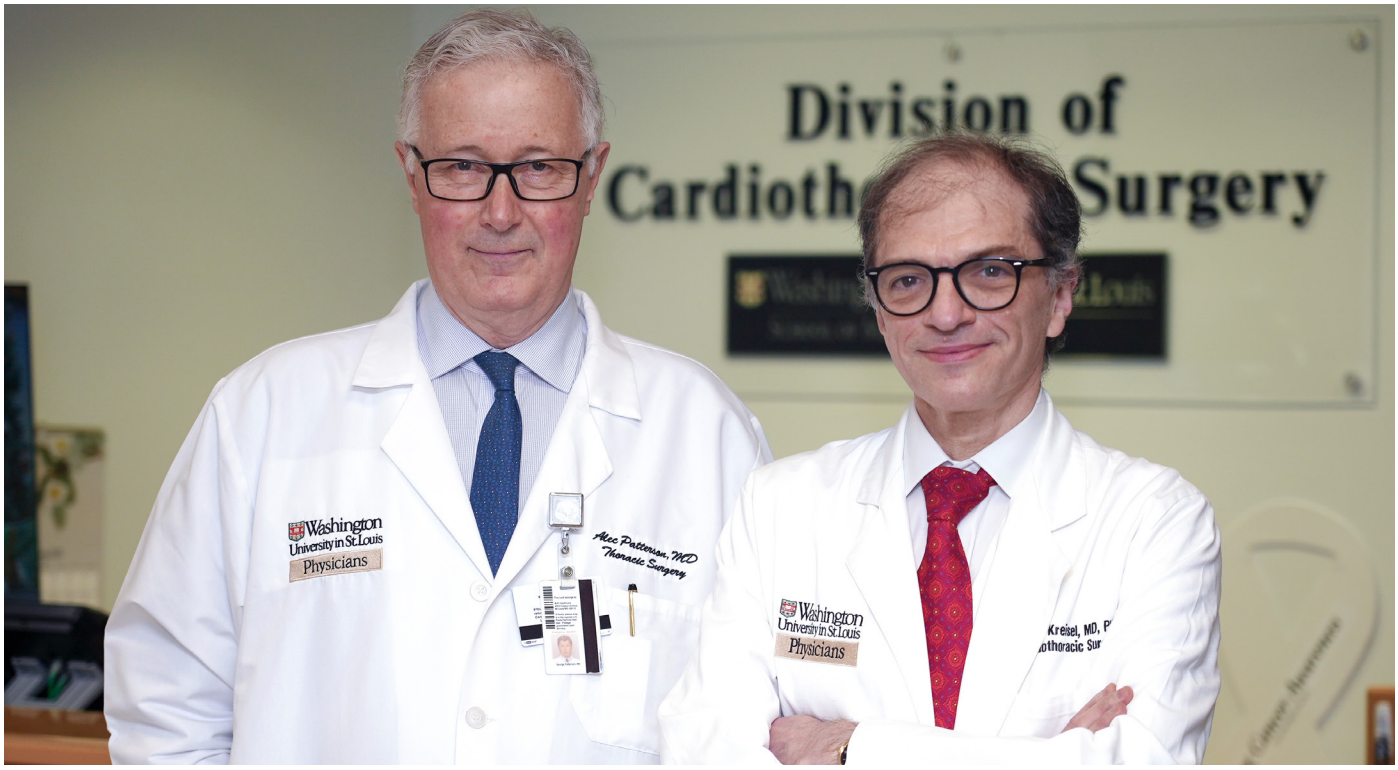
The Society of Thoracic Surgeons has rated the Section of Thoracic Surgery as Better than Expected on their public reporting website. The majority of General Thoracic Surgery Database participants receive a 2-star ("as-expected") rating. In comparison, far fewer participants receive 1-star ("worse than expected") or 3-star ("better than expected") ratings. In general, a 2-star or 3-star rating is consistent with good or excellent performance. The section scored Better than Expected in Esophagectomy Composite Measure Rating in three categories: Overall Composite Score, Absence of Operative Mortality, and Absence of Major Morbidity. The section and Barnes-Jewish Hospital partners continue to focus on positive outcomes and reducing mortality.

Education

This May, at the American Association for Thoracic Surgery's (AATS) 103rd Annual Meeting in Los Angeles, general surgery resident Louisa Bai, MD, was named the winner of the prestigious C. Walton Lillehei Resident Forum. Bai received this award for her research on mechanisms of lung transplant-mediated ischemia reperfusion injury under the mentorship of **Ruben Nava**, MD. She was also recognized recently as the winner of the Basic and Translational Research category of the 2023 Department of Surgery Samuel Wells Resident Research Day for the same work. She also received the Department of Surgery Teaching Awards for 2020-2021 and 2021-2022 for her contributions to quality education. Her current research interests include lung transplantation, ischemia reperfusion injury, and organ donor optimization.

Research

Postdoctoral researchers presented two research projects conducted under the mentorship of **Daniel Kreisel**, MD, PhD at Kouchoukos Research Day 2023. One research subject presented provided insight to immune response after transplantation surgery. The study highlights recipient interleukin-1B (IL-1B) drives granulocyte colony stimulating factor (G-CSF) secretion and mobilization of immunosuppressive myeloid cells after lung transplantation. G-CSF is a potent pro-inflammatory cytokine that is crucial for host-defense responses to infection and injury granulocyte colony stimulating factor. The other study presented findings how fibrotic progression from acute cellular rejection is prevented in the absence of secondary lymphoid organs in a mouse model of chronic lung allograft dysfunction.



G. Alexander Patterson, MD, left, and Daniel Kreisel, MD, PhD.

Care at the Highest Caliber

The Lung Transplant Program saw the completion of its 2000th lung transplant operation on January 4, 2023. Only three other transplant centers in the nation currently boast the same accomplishment, including the Cleveland Clinic Lung Transplant Program, the Duke Lung Transplant Clinic and the Transplant Program at University of Pittsburgh Medical Center.

"Our program is the fourth lung transplant program in the U.S. to reach this milestone of 2000 transplants, and one of very few programs worldwide," says Ramsey Hachem, MD, who serves as medical program director. "We look forward to continuing to provide excellent care to patients with advanced lung disease through transplantation."

The program, which was established in 1988 at Washington University School of Medicine and Barnes-Jewish Hospital, has made massive strides in the advancement of transplant care and research, continuing to shatter national and international records while maintaining a quality level of care for each patient.

The lung transplant team has consistently worked at an impressive pace to provide the best care since the very beginning. Joel Cooper, MD, who established the program, was a key innovator in the development of single- and double-lung transplants. **G. Alexander Patterson**, MD, served as the first director of the program and still continues his work at Washington University within the Department of Surgery. Today, the program is led by Surgical Program Director **Daniel Kreisel**, MD, PhD, and Medical Program Director Hachem.

In recent years, the program has worked tirelessly to improve patient care and reduce wait times to get patients off waitlists and into operating rooms. In 2019, the lung transplant team broke records by performing 103 transplants in a single year. In 2021, they celebrated the landmark of completing 1,900 lung transplants.

"Our program performs consistently amongst the highest volumes of lung transplants in the country. We are a referral center for complex patients who are not considered for lung transplantation at other centers," says Kreisel, who is the G. Alexander Patterson, MD/Mid-America Transplant Endowed Distinguished Chair in Lung Transplantation. "In addition to our clinical program, our group has one of the most productive research programs in lung transplantation. We are conducting clinical trials, performing clinical research and our laboratories have contributed to our understanding of lung transplantation biology."

Patient care remains paramount. Throughout the course of the program's history, the dedicated surgeons and doctors on the team have vastly improved short- and long-term outcomes which consistently remain above national averages. In collaboration with Mid-America Transplant, the program has managed to reduce wait times and proudly offers more options for more patients, even those considered too high risk for other centers.

Section of
Pediatric Cardiothoracic Surgery

Our pediatric cardiothoracic surgeons treat children with congenital cardiac disorders. They treat a wide range of conditions, from atrial septal defects to complex single ventricle anomalies, neonatal surgery, surgery for congenital heart disease and tracheal reconstruction. The lung transplant program at St. Louis Children's Hospital is among the most active in the world, attracting patients with cystic fibrosis and other lethal diseases from around the globe. The pediatric heart transplant program is considered a national leader. The section also offers advanced training through an ACGME-accredited congenital cardiothoracic surgery fellowship.

Our Year in Numbers

1,965
operating room cases

1,536
visits

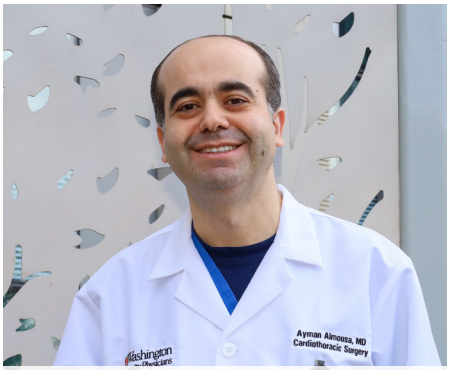
4
faculty

30
clinical research studies

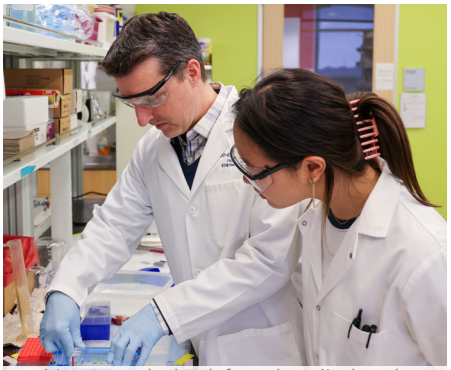
$122,454
research funding

Highlights


Pirooz Eghtesady, MD, PhD, right.



Ayman Almousa, MD.


Mathieu Garand, PhD, left, and medical student Ching Ching Zhang.

Clinical

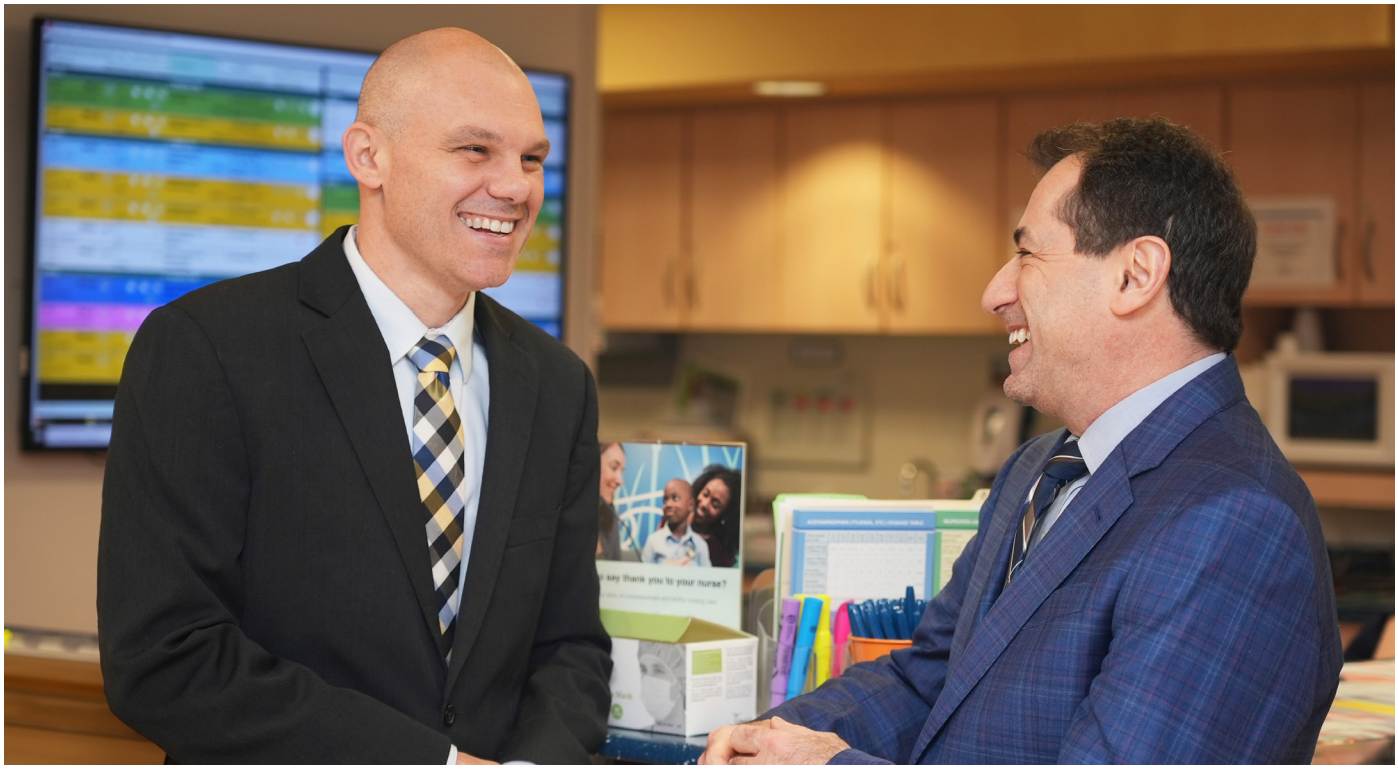
Tetralogy of Fallot (ToF) is one of the most common complex congenital pediatric heart defects, in which part of the heart does not form correctly in-utero. The Section of Pediatric Cardiothoracic Surgery published new data from a study that surveyed mechanisms leading to standard failure of valve repair techniques. The study, which provides details on how to improve outcomes for ToF, was presented at the American Association of Thoracic Surgery (AATS). "The department boasts a success rate of zero percent mortality in over a decade," says database manager Matt Canter. The section has been selected as a data coordinating center for the AATS ToF registry. The first report of registry data was presented at the AATS annual meeting this year.

Education

The Section of Pediatric Cardiothoracic Surgery at Washington University School of Medicine is among the few programs in the country offering a congenital cardiac fellowship. Current fellow Ayman Almousa, MD, is an accomplished surgeon-scientist who has published findings from a longitudinal study on adult arrhythmias in The Journal of Thoracic and Cardiovascular Surgery (JTCVS), which discusses the results of robotic-assisted cryothermic Cox-maze procedure for nonparoxysmal atrial fibrillation over the course of 60 months. "Dr. Almousa demonstrates an exceptional skillset and drive to provide the highest quality of care for our patients," says **Pirooz Eghtesady**, MD, PhD. "Our track record continues to be to place trainees with stellar careers at leading institutions, and Dr. Almousa is no exception."

Research

Mathieu Garand, PhD, a faculty investigator in pediatric cardiothoracic surgery, leads ongoing experimental research studying Human Pegivirus (HPgV) co-infection with COVID-19. Garand published research studying the behavior of the non-pathogenic HPgV infection during pregnancy over the course of two pregnancies. VirScan detected the virus in the patient during the first trimester of both pregnancies. The virus is known to co-infect with human immunodeficiency virus and hepatitis C, while delaying or suppressing progression and symptoms. Ongoing research studies the role of this virus in post-transplant lymphoproliferative disorder (PTLD)—a group of rare and heterogeneous lymphoid proliferations that occur resulting from immunosuppression following solid organ transplant and haematopoietic stem cell transplant (HSCT). The study oversees the reaction and immunology of pediatric valve transplants.



Jacob Miller, MD, left, and Pirooz Eghtesady, MD, PhD.

A Durable Solution for Valvular Defects

While pediatric heart transplantation is a vital treatment option for some infants born with congenital heart defects, this complex procedure requires a donor organ and is subject to the potential challenges of organ rejection. Washington University pediatric cardiothoracic surgeons and researchers are investigating an innovative method of valve transplant that could serve as an alternative to whole-heart transplant for some patients.

“People are familiar with the idea of heart transplant, but this is specifically intended for infants and children whose hearts are otherwise fine, though they have defective valves that are not working,” says Section Chief of Pediatric Cardiothoracic Surgery **Pirooz Eghtesady**, MD, PhD.

While this new method remains in its early stages of development, doctors are optimistic in its application for future patients. The team acknowledges peers’ success in other medical institutions who are innovating in tandem. “Some institutions have begun performing valve transplants, taking a valve from the heart of a donor and transplanting it into a recipient,” says **Jacob Miller**, MD. He explains that the process is similar to heart transplants, but that only the valve is transplanted; the idea being that the transplanted valve will grow with the patient.

“This procedure is done to potentially supply these patients with a heart valve that is more durable over the long-term and will grow as the patient grows. One of the main areas of interest will be the immunologic response,” Miller says. “As this operation has only been done a handful of times throughout the country. This means the immunological viability of transplanted tissue currently remains unknown. And this immunologic response could play a vital role in the longevity of these valves.”

Investigators at Washington University, including Miller and Eghtesady, intend to study the immunologic response to transplanted valve tissue to better understand the viability of this procedure for patients with functional hearts but defective valves.

“When this fully takes shape, it could be paradigm-changing for our field,” says Eghtesady, who also serves as the Emerson Chair in Pediatric Cardiothoracic Surgery and cardiothoracic surgeon-in-chief at St. Louis Children’s Hospital. “Currently, there simply is no alternative for patients with valvular disease that is perfect. The mechanical and bioprosthetic valves in existence today come with certain drawbacks. Mechanical valves require lifelong anticoagulation, which increases risk of bleeding or stroke. Biological valves have inevitable structural deterioration requiring reintervention for repeat surgery. In the context of children, neither has any growth potential. Valve transplantation could truly be the next step in finding a viable solution for these young patients.”

Section of

Acute and Critical Care Surgery

Our acute and critical care surgeons specialize in traumatic injuries, emergency surgeries, geriatric trauma, general surgeries, burn and wound care, and critical care. They provide top-quality care to a high volume of cases at Barnes-Jewish Hospital, a regional referral center for critically ill patients and designated Level I Trauma Center by the state of Missouri. These surgeons collaborate with intensivists from anesthesiology and emergency medicine. Trainees are exposed to a large patient population and receive mentorship from nationally recognized surgical leaders while treating complicated cases on several intensive care units.

Our Year in Numbers

9,791
operating room cases

57,738
visits

35
faculty

2,640
office procedures

82
clinical research studies

$2,266,551
research funding

Highlights

Left: Craig Smith, MD, MBA.

Grant Bochicchio, MD, MPH.

Matthew Rosengart, MD, MPH.

Clinical

In March, the Department of Surgery welcomed three new faculty members at Missouri Baptist Medical Center. **Omar Guerra**, MD, **Craig Smith**, MD, and **Jeffrey Zuke**, MD, each joined the Section of Acute and Critical Care Surgery as assistant professors. Each offers a unique background experience and a set of expertise. “We see people with a wide spectrum of concerns, from common problems to the most complex surgical cases,” says Smith, who completed his general surgery residency at Washington University. “These patients have access to world-class surgical experience and more opportunities than ever to find the care they need from a Washington University Physician.”

Education

The Mission Zero grant, awarded to Washington University School of Medicine in fall 2022, provides federal grants to integrate military trauma care providers into civilian trauma centers. According to the CDC, trauma is the leading cause of death for children and adults under the age of 44, killing more Americans than AIDS and stroke combined. “We are among twenty-five top institutions who have received the grant,” says **Grant Bochicchio**, MD, MPH, Chief of Acute and Critical Care Surgery and Edison Professor of Surgery. “This grant allows us to provide the highest quality of training to military care providers in our Level 1 Trauma Center. Through Mission Zero, we are building military-civilian partnerships to improve our response to public health and medical emergencies.”

Research

Matthew Rosengart, MD, MPH, who joined the section as professor of surgery in 2023, is an accomplished surgeon-scientist, whose focus is on molecular biology of sepsis, hemorrhage and traumatic organ injury. He previously served as co-director of trauma surgery, director of the surgical critical care fellowship and director of the Surgical Outcomes Research Center at the University of Pittsburgh. He completed an NIH/NRSA fellowship in molecular biology and earned a master’s degree in public health at University of Washington in Seattle, where he completed a general residency and trauma/surgical critical care fellowship. Rosengart has made significant contributions in understanding calcium-dependent regulation and signaling during the inflammatory states of sepsis and injury. His research has been continuously funded by the NIH since 2005. His total career funding exceeds $5 million.

Katherine Caldwell, MD, MSCI.

Team-Based Critical Care

Surgeons in the Section of Acute and Critical Care Surgery (ACCS) provide care at Barnes-Jewish Hospital, which serves as a regional referral center for critically ill patients and has been designated a Level 1 Trauma Center for the state of Missouri.

Historically, the section operated with a single large trauma service and emergency general service. The ACCS service has continuously cared for a large number of complex patients. A newly introduced ACCS team structure offers a resident-led structure of caring for critically injured and emergency general surgery (EGS) patients, consisting of four resident teams, one for EGS and three trauma teams.

Each team is led by a senior resident who is responsible for evaluating all patients on the service and driving care. “Together with two junior residents on each team, we provide comprehensive pre-, intra-, and post- operative care of patients in their service,” says administrative chief resident **Katherine Caldwell**, MD, MSCI (PGY-5). “With this model, resident teams are able to provide incredible continuity of care for patients.” Residents evaluate patients upon admittance, care for them during critical phases in the ICU, and follow those patients throughout their hospitalization to recovery.

The goal of the model is to improve the continuity and quality of care provided to a large group of patients cared for by the BJH/WashU system. “In many cases, the patients cared for by the ACCS service present in difficult situations of acute traumatic injury or with emergent surgical needs,” says administrative chief resident **Bradley Kushner**, MD (PGY-5). These patients may additionally have complex social situations which lead to their arrival at the hospital.

“By providing improved continuity, we improve the relationship between patients and providers and can improve the trust of the healthcare team by relationship building,” says Caldwell.

Additionally, the team model has been incredibly well-received by the residency community. “The model is recognized to improve the resident experience on the ACCS service by increasing resident interactions and team camaraderie as well as increasing senior resident autonomy,” says **Grant Bochicchio**, MD, MPH, the Edison Professor of Surgery and chief of the Section of Acute and Critical Care Surgery. “Our residents have an incredible privilege to care for these patients and we are thrilled to have, with the support of the ACCS team, found ways to improve the quality of care we are able to provide.”

Section of
Colon and Rectal Surgery

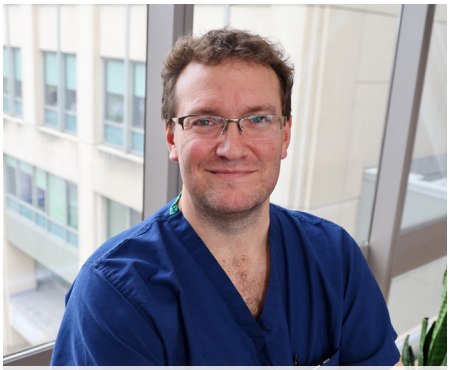
Our colon and rectal surgeons are leaders in research and treatment in all aspects of colorectal surgery. Surgeons provide collaborative, comprehensive care for diseases of the colon, rectum and anus. Faculty are leaders in their field and have expertise in laparoscopic surgery, offering this treatment for colon and rectal cancer, diverticulitis, ulcerative colitis, Crohn's disease, colon polyps, rectal prolapse and chronic constipation. Surgeons apply basic science research to the clinical realm, offer several colorectal cancer clinical trials and train the next generation of surgical innovators through a one-year fellowship.

Our Year in Numbers

3,785 operating room cases	**21,158** visits	**9** faculty
2,612 office procedures	**30** clinical research studies	**$132,291** research funding

Highlights


William Chapman Jr., MD, MPHS.


Matthew Silviera, MD, MS.


Matthew Mutch, MD.

Clinical

In 2023, **William Chapman Jr.**, MD, MPHS, **Lawrence Mendelow**, MD, and **Alyssa Wait**, MD, joined the Section of Colon and Rectal Surgery as assistant professors of surgery. Chapman completed his general surgery residency and earned a master's degree in public health sciences at Washington University School of Medicine in St. Louis before completing a colon and rectal fellowship at the Cleveland Clinic. The growth of faculty in colon and rectal surgery enables the section to provide leading colorectal care to a greater volume of patients at more clinical locations across the St. Louis region. "Washington University colorectal surgeons are at the forefront of delivering top surgical care informed by the latest advances," says Chapman.

Education

The Washington University colon and rectal surgery fellowship, established in 1980, is among the longest-standing programs of its kind in the United States. Led by program director **Matthew Silviera**, MD, MS, the fellowship provides in-depth experience in all aspects of colorectal disease and surgery to three fellows each year. Current fellows Austin Dosch, MD, PhD, Harika Nalluri-Butz, MD, and Lindsay Zhang, MD, MS, work closely with colorectal faculty and gastroenterologists, pathologists, medical and radiation oncologists, enterostomal therapists, and other specialists to care for patients with colorectal cancer and other diseases of the colon and rectum.

Research

Advances in treatment for rectal cancer allow some patients to avoid surgery. Existing imaging modalities, however, make it difficult to determine whether the cancer has been successfully treated with no residual cancers. Section Chief of Colon and Rectal Surgery **Matthew Mutch**, MD, the Solon and Bettie Gershman Professor of Surgery, and Quing Zhu, a biomedical engineer at the McKelvey School of Engineering, are developing a new imaging technology combining photoacoustic microscopy, ultrasound and deep learning to better determine the safety of nonsurgical monitoring after radiation and chemotherapy. This research is supported by a four-year $1.75 million grant from the National Institutes of Health.

William Chapman Jr., MD, MPHS, left, and Ebun Otegbeye, MD.

Risk Markers for Early-Onset Colorectal Cancer

Research led by faculty in the Section of Colon and Rectal Surgery and the Division of Public Health Sciences has identified four important signs and symptoms signaling an elevated risk of early-onset colorectal cancer. Cases of colorectal cancer in adults under age 50 have nearly doubled in recent years.

In a study of de-identified health insurance data of more than 5,000 patients with early-onset colorectal cancer, investigators found that in the period between three months and two years before diagnosis, abdominal pain, rectal bleeding, diarrhea and iron deficiency anemia each indicate an increased risk in those under age 50.

“Young-onset colorectal cancer poses a significant threat,” says Section Chief of Colon and Rectal Surgery **Matthew Mutch**, MD. “People born in 1990 have double the risk of colon cancer and four times the risk of rectal cancer compared with young adults born in 1950. Addressing this recent shift requires us to understand key red flags for this unique patient population.”

The study, published in the Journal of the National Cancer Institute, was led by Mutch, Yin Cao, ScD, an associate professor in the Division of Public Health Sciences, Washington University gastroenterologist Cassandra Fritz, MD, and general surgery resident **Ebunoluwa Otegbeye**, MD.

“We want younger adults to be aware of and act on these potentially very telling signs and symptoms—particularly because people under 50 are considered to be at low risk, and they don’t receive routine colorectal cancer screening,” says Cao, a research member of Siteman Cancer Center at Barnes-Jewish Hospital and Washington University School of Medicine. “It’s also crucial to spread awareness among primary care doctors, gastroenterologists and emergency medicine doctors. To date, many early-onset colorectal cancers are detected in emergency rooms, and there often are significant diagnostic delays with this cancer.”

The investigators note that, while the death rate from colorectal cancer has been dropping for several decades in older adults, more younger people are diagnosed with the disease at advanced stages.

“This disparity in the stage of detection is leading to many younger people dying of the disease,” says Otegbeye.

Along with Mutch, a growing faculty of Washington University colorectal surgeons, and a multidisciplinary team, have developed a dedicated program for early-onset colorectal cancer at Barnes-Jewish Hospital and Siteman Cancer Center. The program combines surgery, medical and radiation oncology, and other specialties to provide the highest level of clinical care, plus services like genetic counseling, physical therapy and rehabilitation, to address the unique needs of this younger patient population.

Section of Minimally Invasive Surgery

This section is dedicated to furthering innovations and utilizing the technological and research advancements on outcomes, techniques and biomaterials. Washington University minimally invasive surgeons specialize in laparoscopic and open treatment of upper gastrointestinal conditions, abdominal wall hernias and bariatric surgery. Their goal is to increase patient benefit by decreasing the size of surgical incisions, resulting in less pain and faster recovery. This section is active on the frontiers of clinical research as well as surgical education and offers a one-year fellowship.

Our Year in Numbers

2,959
operating room cases

18,453
visits

9
faculty

295
office procedures

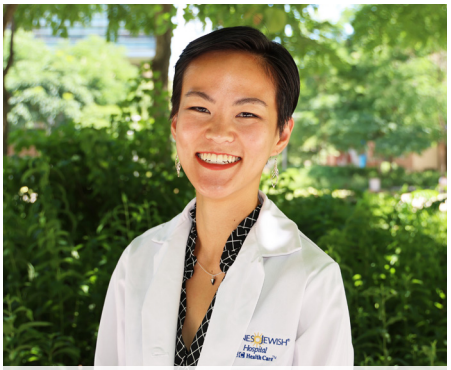
45
clinical research studies

$45,000
research funding

Highlights

Jeffrey Blatnik, MD, left, and Arnab Majumder, MD.

Michael Awad, MD, PhD, MHPE.



Helen Li, MD.

Clinical

Washington University hernia surgeons specialize in complex abdominal wall reconstruction. **Jeffrey Blatnik**, MD, and **Arnab Majumder**, MD, offer minimally invasive approaches, including laparoscopic and robotically assisted procedures, for abdominal wall hernias. These surgeons have recently introduced additional procedures for the treatment of diastasis recti, a condition that occurs when the rectus abdominis muscles separate during and after pregnancy. "We have developed a reputation as regional leaders in abdominal wall reconstruction," says Blatnik. "Thanks to our success with even the most complex problems, referring physicians from around the Midwest can entrust us with the care of their patients with the confidence that we will provide the highest quality durable results."

Education

Michael Awad, MD, PhD, MHPE, was named president of the Association for Surgical Education (ASE)—the premier surgical education society in North America. He serves as director of WISE, an American College of Surgeons (ACS) Accredited Education Institute, where he directs the WISE Simulation Fellowship and serves as associate program director for the general surgery residency. Awad is a longtime member of ASE, having joined during his residency training at Johns Hopkins University School of Medicine. He additionally serves in multiple leadership roles for the ASE, ACS, SAGES, American Foregut Society and Association for Program Directors in Surgery. Awad humbly attributes his success to mentorship and driving support from his colleagues and staff.

Research

General surgery resident **Helen Li**, MD, was selected as a Fogarty LAUNCH Fellow by the Northern Pacific Global Health Leadership, Education and Development for Early-Career Researchers (LEADERs) program, to conduct global health research in Kenya. LEADERs, which supports one year of mentored research training in global health at established biomedical and health research institutions and project sites, provides research funding, travel support for NIH events, and coverage of other costs and salary support. "I hope to use this Fogarty grant to create opportunities for reciprocal innovation in general surgery which can benefit underserved communities in the U.S. as much as those in Kenya," says Li.

Michael Brunt, MD, left.

Milestones in Surgical Training

In 2023, the section celebrated two important milestones: the 30th anniversary of the Washington University Institute for Minimally Invasive Surgery (WUIMIS) and the 20th year of the Advanced GI/Minimally Invasive Surgery fellowship. WUIMIS was unique at the time of its formation in 1993 for its multidisciplinary structure. Members included general, colorectal, urologic, thoracic, pediatric and gynecologic surgery faculty, as well as gastroenterologists. Its formation was supported by a $4.1 million industry grant. WUIMIS has advanced research, education and clinical excellence in minimally invasive surgery, serving as a training and education center in advanced laparoscopic surgery, developing and standardizing techniques in advanced laparoscopic surgery, and fostering clinical and basic-science translational research in the field.

WUIMIS became the hub for the first formalized surgical skills training curriculum, started by Mary Klingensmith, MD. **Jeffrey Blatnik**, MD, currently serves as director of WUIMIS. **Michael Awad**, MD, PhD, current president of the Association for Surgical Education, formed the Washington University Institute for Surgical Education (WISE) in partnership with WUIMIS. WISE has been continuously accredited by the American College of Surgeons since 2012. In 2019, WISE instituted a surgical education research fellowship with five resident research fellows to date.

Washington University trainees also have the opportunity to enhance surgical skills through involvement with Surgical Outreach for the Americas (SOfA), a non-profit organization formed by previous WISE administrator Peggy Frisella. Surgeons, anesthesiologists, surgical residents and other medical professionals volunteer to provide surgical services for underserved communities in developing countries of South America. SOfA has completed 22 missions and performed over 1,900 operations to date.

Education has always been a core mission of the Section of Minimally Invasive Surgery. Five different faculty in the section have received the highest departmental teaching awards from the surgical residents – the Evarts Graham Teaching Award and the Jeffrey F. Moley Chief Resident Mentorship Award. Bethany Sacks, MD, MEd, serves as director of the Integrated Surgical Clerkship for medical students.

The Advanced GI/MIS/Foregut Surgery fellowship, according to Fellowship Program Director **Michael Brunt**, MD, is among the top clinical fellowship programs in North America. Brunt also serves as Pruett Family Professor of Surgery and chief of the Section of Minimally Invasive Surgery. The fellowship has been continuously funded in part through industry and Foundation for Surgical Fellowship grant. With the growth in clinical activity of the section, the fellowship now accommodates two clinical fellows each year. **J. Chris Eagon**, MD, served as assistant program director from 2008-2023, with Awad assuming the role this past August.

The fellowship is administered by the Fellowship Council, the governing body that oversees national fellowship training programs in order to uphold uniformly high standards and produce well-trained surgeons. Brunt served as president of the Fellowship Council from 2021-22 and has recently finished his term as immediate past-president.

Section of
Surgical Oncology

Our surgical oncologists provide up-to-date care for breast and endocrine system disease, melanoma and sarcoma, and other cancers at Siteman Cancer Center, the only Comprehensive Cancer Center in Missouri. Faculty consists of nationally recognized leaders in research to advance treatment and constantly improve quality of care. Among the largest endocrine surgery practices in the country, surgeons also offer expertise in thyroid cancer, adrenal tumors and hyperparathyroidism. This section offers clinical trials that evaluate new therapies, supports clinical and research opportunities for general surgery residents, and offers a breast disease fellowship.

Our Year in Numbers

2,516
operating room cases

16,669
visits

11
faculty

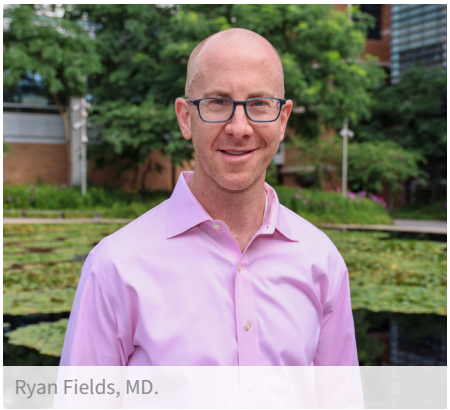
155
office procedures

76
clinical research studies

$4,570,854
research funding

Highlights


Julie Margenthaler, MD.


Ryan Fields, MD.


Taylor Brown, MD, MHS.

Clinical

For patients with low-risk, early stage breast cancer, the standard treatment is lumpectomy. Cryoablation—a method of destroying tumors with extremely cold gas—is commonly used to treat other forms of cancer, but has not been widely studied in breast cancer. Surgical oncologist **Julie Margenthaler**, MD, a professor of surgery, and breast radiologist Heather Garrett, MD, are leading a trial to assess the safety and efficacy of cryoablation. They aim to determine whether percutaneous ultrasound-guided cryoablation can be used in patients who are not candidates for surgery, as well as how cryoablation compares to lumpectomy for disease control, complication rates and quality of life.

Education

The Stimulating Access to Research in Residency (StARR) program at Washington University School of Medicine, led by **Ryan Fields**, MD, and funded by the NIH, trains students, postdoctoral candidates and residents pursuing careers in cancer research. "Trainees participate in one to two years of dedicated research alongside mentors and colleagues, after which they may continue to engage in the research process," says Fields. The program accepts trainees across disciplines, pairing them with mentors in their area. Derek Li, MD, a resident in the Department of Neurosurgery and general surgery resident **Nikki Rosetti**, MD, MSc, are the program's inaugural graduates. The program also fosters next steps in fellowships and junior faculty positions, so residents can become successful independent researchers.

Research

The NIH-funded Endocrine Neoplasia Research Group, led by principal investigator and department chair **John Olson Jr.**, MD, PhD, is dedicated to advancing knowledge of endocrine tumor biology. Investigator and assistant professor of surgery **Taylor Brown**, MD, MHS, who received the 2020 ThyCa and 2022 Paul LoGerfo research awards for his research, is investigating a novel therapeutic target in anaplastic thyroid cancer. "We hypothesize that anaplastic thyroid cancers have unstable genomes," says Brown. "As such, inhibition of DNA repair pathways will sensitize these cancers to DNA damaging therapies and cause cancer cell death."

Rebecca Aft, MD, PhD.

Pioneering Single-Port Breast Cancer Surgery

Rebecca Aft, MD, PhD, has initiated a program dedicated to robotic breast surgery at Washington University School of Medicine and Barnes-Jewish Hospital. In 2023, she performed the first single-port robotically assisted nipple-sparing mastectomy (NSM) at the institution. This operation marks one of the first such procedures in the United States.

Aft, who is the inaugural Jeffrey Moley Professor of Endocrine and Oncology Surgery, performed the procedure as part of a clinical trial taking place at fifteen institutions across the country. The clinical trial is dedicated to evaluating the safety and effectiveness of the da Vinci SP Surgical System compared to open NSM procedures.

“Dr. Aft is a luminary in surgical oncology and breast cancer research,” says **John Olson Jr.**, MD, PhD, the William K. Bixby Professor and chair of the Department of Surgery.

“The single-port robot performs surgery using a single incision of about three centimeters, while the conventional open surgery may need a port of 10 or 15 centimeters,” Aft says.

The benefits of this approach over the conventional open surgery procedure may be manifold. “Besides the smaller incision, we think blood-flow to the flaps will be better, which will in turn improve cosmetic results,” Aft says. “We hope that because it is easier to distinguish the different tissue using the robot, we’ll also see better results in terms of the cancer surgeries.”

Aft works alongside plastic and reconstructive surgeon Rachel Anolik, MD, who specializes in microvascular procedures, to provide the full spectrum of oncologic and reconstructive care. With traditional approaches to breast cancer surgery, patients seeking breast reconstruction must typically wait months before having a secondary procedure. Due to the improved vascularity after single-port surgery, Anolik notes the potential to use implants immediately following mastectomy.

“I have an outstanding team in the Department of Surgery—and across our institution—to thank for this success,” says Aft.

To prepare for this clinical trial, Aft engaged the dedicated robotic surgery team at the medical school, led by Meranda Scherer, RN. Aft and Scherer established a process, conducted training labs and ultimately made this first procedure a success.

“Ultimately, we seek to innovate in areas that will benefit our patients, and Washington University is the ideal place to pioneer such innovations,” says **Ryan Fields**, MD, who is the Kim and Tim Eberlein Distinguished Professor of Surgery and chief of the Section of Surgical Oncology.

Section of

Transplant Surgery

Our transplant surgeons have a history of pioneering new clinical techniques and leading advancements in the field. In liver transplantation, the program offers living-related and -unrelated donor, reduced-size liver, split liver and dual-organ transplantation. Faculty offer both laparoscopic and "mininephrectomy" kidney donor procedures as well as robotic kidney transplantation. They are at the forefront of research and development in islet cell transplantation and have the largest pancreas transplant program in the region. Along with their clinical expertise, faculty lead in research and train fellows in a nationally recognized, two-year certified program.

Our Year in Numbers

1,643
operating room cases

10,932
visits

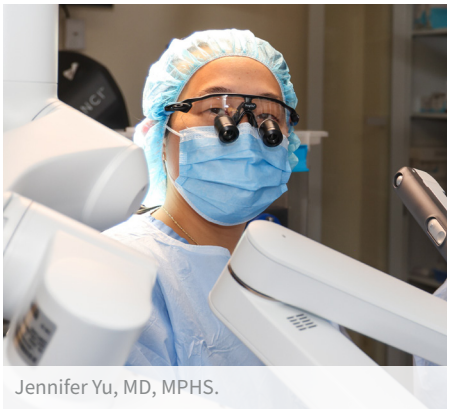
11
faculty

57
clinical research studies

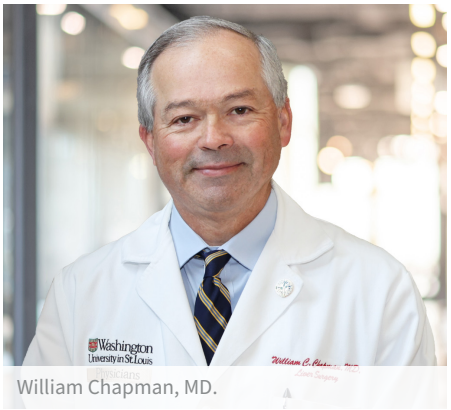
$1,366,653
research funding

Highlights

Gregory Martens, MD, PhD.



Jennifer Yu, MD, MPHS.



William Chapman, MD.

Clinical

Washington University transplant surgeons provide leading-edge care to patients with diseases of the liver and kidneys, pancreas, liver, bile ducts and stomach. As the need for transplants continues to increase, demand for highly-skilled transplant surgeons is also on the rise. **Darren Cullinan**, MD, MSCI, and **Gregory Martens**, MD, PhD, joined the section this year, increasing the section's reach to more patients in need of lifesaving surgeries. Martens completed general surgery residency training at University of Alabama at Birmingham, while Cullinan completed his general surgery residency at Washington University School of Medicine in St. Louis. Both Cullinan and Martens completed abdominal transplant surgery fellowships at Washington University.

Education

For more than three decades, the Washington University Abdominal Organ Transplant Fellowship has trained future leaders in transplantation. The fellowship is led by **Maria B. Majella Doyle**, MD, MBA, the Mid-America Transplant/Department of Surgery Distinguished Endowed Chair in Abdominal Transplantation, director of liver transplant at Barnes-Jewish Hospital and St. Louis Children's Hospital, and Executive Vice Chair of the Department of Surgery. In 2023, Doyle was awarded Honorary Fellowship in the Royal College of Surgeons in Ireland. "The clinical experience in this program is second to none," says **Jennifer Yu**, MD, MPHS, an assistant professor of surgery and past transplant fellow whose own excellence in teaching has been recognized with numerous awards.

Research

The RESTORE Declined Livers Study, led by **William Chapman**, MD, aims to increase the number of livers utilized for transplantation by using normothermic machine perfusion (NMP). Washington University transplant surgeons, investigators and public health scientists formed the RESTORE Investigators Group to collaboratively assess the use of NMP. A study from this group, published in the Journal of the American College of Surgeons in 2023, reports that more than 72% of declined livers treated with NMP over a 22-month period were then transplanted. Chapman has led the effort to establish an NIH-funded national, multicenter study of NMP for declined livers.

Meranda Sherer , MSN, CRNFA, left, and Adeel Khan, MD.

First Robotic Liver Transplant in U.S.

Washington University transplant surgeons recently performed the first robotic liver transplant in the U.S. The successful transplant, accomplished in May at Barnes-Jewish Hospital, extends to liver transplants the advantages of minimally invasive robotic surgery: a smaller incision resulting in less pain and faster recoveries, plus the precision needed to perform one of the most challenging abdominal procedures.

The patient, a man in his 60s who needed a transplant because of liver cancer and cirrhosis caused by hepatitis C virus, is doing well and has resumed normal, daily activities. Typically, liver transplant recipients require at least six weeks before they can walk without any discomfort. The patient was not only walking easily one month after surgery but also cleared to resume golfing and swimming.

“The transplant was a success: The operation went smoothly, the new liver started working right away, and the patient recovered without any surgical complications,” says Associate Professor of Surgery **Adeel Khan**, MD, who led the team that conducted the trailblazing surgery. “Liver transplantation heavily relies on a specialized team for good outcomes. We are very fortunate to have the support needed to develop a world-class robotic transplant team that allows us to safely perform complex operations. This team is a big part of our success.”

“Liver transplantation is the most difficult of the abdominal organs to consider for a minimally invasive approach—given the difficulty of removing a failing liver and successfully implanting the new organ—but Dr. Khan has shown that this is possible,” says Chief of Transplant Surgery **William Chapman**, MD, the Eugene M. Bricker Professor of Surgery. “Further experience with this technique will be needed to establish the extent of the benefits of performing liver transplant as a minimally invasive approach.”

Washington University and Barnes-Jewish Hospital have focused heavily on robotic surgery to advance minimally invasive surgeries and improve patient outcomes. The robotic transplant team was formed five years ago, with an initial focus on kidney transplants. To date, the team has performed more than 30 robotic kidney transplants, all with good outcomes, as well as living-donor kidney removal surgery and other robotic surgeries.

“We have built a dedicated robotic transplant team that is second to none,” Khan says. “Once we had this team in place, it allowed us to grow in both number and complexity of cases while maintaining very good patient outcomes. Since starting our program, we have mentored over 30 transplant centers around the country in building successful robotic programs of their own. Transplant teams come to observe our process, and we visit their sites and mentor them as they develop their skills. We are probably one of the very few places in the country that has the support, expertise and team to take robotic transplant surgery to this level.”

Section of Vascular Surgery

Our vascular surgeons have provided leading-edge quality patient care since the establishment of the service in 1983. This section offers open and endovascular treatment for vascular disease and participates in clinical trials of stent graft devices to treat thoracic aneurysms using endovascular techniques. Faculty provide innovative training in residency and fellowship programs accredited by the ACGME. Members of the section lead basic science, translational research, clinical outcomes and novel device trials, and they support the education of the numerous general surgery residents in rotation on the service.

Our Year in Numbers

4,100
operating room cases

20,333
visits

14
faculty

189
office procedures

52
clinical research studies

$1,574,154
research funding

Highlights

Vipul Khetarpaul, MD.

J. Westley Ohman, MD.

Mohamed Zayed, MD, PhD., MBA.

Clinical

Washington University vascular surgeons advance patient care through their involvement in clinical trials focused on key vascular disease processes. **Mohamed Zayed**, MD, PhD, MBA, is leading an NIH funded clinical trial to develop a new approach for the diagnosis and targeted therapy of abdominal aortic aneurysm using an investigational PET tracer for research imaging studies. In a national multicenter trial, **Vipul Khetarpaul**, MD, and a team of researchers are investigating the safety and efficacy of percutaneous mechanical aspiration thrombectomy for treatment of acute pulmonary embolism. “Clinical trials are essential to our understanding of vascular disease,” says **Luis Sanchez**, MD, section chief of vascular surgery. “Testing novel devices and approaches enables us to offer up-to-the-minute care for our acute patient population.”

Education

The Washington University vascular surgery residency program, led by **J. Westley Ohman**, MD, prepares trainees for careers in vascular surgery through its emphasis on both clinical care and innovative research. In collaboration with **Mohamed Zayed**, MD, PhD, MBA, and a team of investigators, vascular surgery intern **Ryan Wahidi**, MD, published an article in the Journal of Magnetic Resonance Imaging, assessing peripheral oxidative metabolism in people with or without diabetes mellitus. PGY-5 resident Brian Sullivan, MD, won the Midwestern Vascular Surgical Society’s Simulation Skills Competition. He received his award from the president of the society and alumni of the Vascular Surgery residency program, Jeffrey Jim, MD.

Research

The CardioVascular Research Innovation in Surgery and Engineering (CVISE) Center, led by **Mohamed Zayed**, MD, PhD, MBA, a professor of surgery, and co-directors Guy Genin, PhD, and Eric Leuthardt, MD, combines multidisciplinary expertise in cardiovascular surgery, engineering and other medical and surgical specialties to develop novel solutions to critical clinical problems. The two-year fellowship brings together one surgical and one engineering fellow, who collaborate on iresearch projects. Inaugural CVISE fellows **Sophia Roberts**, MD, a general surgery resident, and DeVaughn Rucker, MsC, a doctoral candidate in biomedical engineering, report that this collaboration allows for unique problem-solving opportunities. “Surgeons and engineers both approach problems with a hands-on approach,” says Roberts. “But we bring very different backgrounds together to address the same clinical problems.”

Patrick Geraghty, MD.

Promising Results in Limb Preservation

The Washington University Limb Preservation Program combines expertise in podiatry, acute and critical care surgery, orthopedic surgery, plastic and reconstructive surgery, and vascular surgery to meet the needs of patients with limb-threatening conditions, such as diabetic foot ulcers, chronic limb-threatening ischemia, peripheral arterial disease and other venous disorders.

"This program is truly novel in the way it combines multidisciplinary expertise from across our institution," says **Patrick Geraghty**, MD, a professor of surgery and program co-director who specializes in lower extremity revascularization. "Patients with limb-threatening conditions tend to have complex problems that require attention from several specialties. By bringing together our specialists in wound care, vascular surgery, reconstruction and orthopedic surgery, we are able to deliver all the care these patients need in a timely and deliberate manner."

In 2023, Geraghty co-directed the second annual Complex Peripheral Vascular Interventions Skills Course from the Society for Vascular Surgery, held in Rosemont, Illinois. By leading this course, Geraghty was able to share knowledge and experiences from the limb program with physicians from across the country, improving the care of patients with potentially limb-threatening vascular conditions.

"The SVS course provides extensive hands-on experience for vascular surgeons," says Washington University vascular surgeon **Vipul Khetarpaul**, MD, who served as course faculty. Khetarpaul, who specializes in limb preservation and endovascular surgery, completed his general surgery residency and vascular surgery fellowship training at Washington University School of Medicine in St. Louis before joining the faculty.

Washington University vascular surgeons are further advancing the care of patients with limb-threatening conditions through their involvement in clinical studies. The Section of Vascular Surgery was selected as a study site for the PROMISE III trial, investigating percutaneous deep vein arterialization for the treatment of late-stage chronic limb-threatening ischemia. This trial will study an approach to pedal vein arterialization for patients ineligible for conventional endovascular or surgical limb preservation procedures.

"Our aim is to provide the highest quality of care for each patient, share our knowledge and experience, and investigate novel approaches to vascular care," says **Luis Sanchez**, MD, the Gregario A. Sicard Distinguished Professor of Vascular Surgery and section chief of vascular surgery. "As academic vascular surgeons, we have a duty to improve treatment options for this large population of patients with acute, limb-threatening conditions."

Division of Pediatric Surgery

Our pediatric surgeons offer comprehensive treatment for pediatric and congenital conditions, burns and trauma. Board-certified pediatric surgeons offer compassionate care in a child-friendly environment at St. Louis Children's Hospital, which has ranked among the top children's hospitals by U.S. News & World Report for 15 consecutive years. The division is a regional center for open fetal surgery, minimally invasive surgeries and treatment for tumors. Faculty are actively involved in novel research and are leaders in education, offering a pediatric surgery fellowship approved by the Accreditation Council for Graduate Medical Education.

Our Year in Numbers

3,797
operating room cases

13,700
visits

9
faculty

332
office procedures

36
clinical research studies

$804,328
research funding

Highlights


Jesse Vrecenak, MD.


Andrew Yeh, MD.

Brad Warner, MD.

Clinical

In 2023, **Jesse Vrecenak**, MD, an assistant professor of surgery, successfully performed the first fetoscopic myelomeningocele repair for the Fetal Care Center. Washington University and St. Louis Children's Hospital are among the few centers with the expertise to perform this specialized surgery to close the defect, preventing further damage and improving the future mobility of the baby. In this severe form of spina bifida, a fluid-filled sac containing the spinal cord and nerves develops outside the back. Babies born with myelomeningocele may experience paralysis or muscle weakness, difficulties with movements, especially walking, bladder and bowel problems, and hydrocephalus, excess fluid in the brain. Offering this procedure with a minimally invasive approach can reduce maternal hospital stays and recovery times.

Education

In order to alleviate public safety concerns while providing essential training for fellows, the division has introduced several initiatives addressing areas that impact pediatric health. "One of our big safety projects is our gun lock distribution effort. In partnership with BJC's emergency medicine department and social services, we provide free gun locks to patients and families," says **Andrew Yeh**, MD. Yeh, medical director of trauma services, encourages anyone interested in gun safety to get in touch with any BJC emergency department. Additionally, BJC's trauma department is moving forward with the Safety Stop initiative, which intends to prevent injury by providing hands-on assistance for installing car seats and obtaining car seats for families in need.

Research

Resident Maria Tecos, MD, received the 2022 Jens Rosenkrantz Resident Research Award in Basic Science for her study in intestinal resection-associated liver injury. Recipients are selected by the American Association of Pediatrics Section on Surgery Program and Publications Committee. **Brad Warner**, MD, the Jessie L. Ternberg, MD, PhD, Distinguished Professor of Pediatric Surgery, was the senior author of the published study. The study was dedicated to liver injury and fibrosis associated with massive small bowel resection (SBR). The study found that administering selected bile acids may serve as therapy to ease resection-associated liver injury. Their findings highlight the significance of the site of intestinal resection as a major contributor to liver injury after massive SBR.

Colin Martin, MD.

Martin Named Chief of Pediatric Surgery

Colin Martin, MD, a specialist in intestinal rehabilitation surgery and an advocate for diversity, equity and inclusion in surgery, has been named chief of the Division of Pediatric Surgery and surgeon-in-chief at St. Louis Children's Hospital.

Martin was recruited from the University of Alabama at Birmingham (UAB) Heersink School of Medicine, where he was surgical director of the Center for Advanced Intestinal Rehabilitation at Children's of Alabama and UAB. He also served as the surgery department's vice chair for diversity, equity and inclusion and co-director of the department's Pre-College Research Internship for Students from Minority Backgrounds while at UAB.

"Dr. Martin is a remarkable pediatric surgeon-scientist whose leadership, surgical skill, innovative research and dedication to improving health equity strongly reflect the core values of our mission in the Department of Surgery," says **Maria B. Majella Doyle**, MD, MBA, the director of the pediatric transplant program at St. Louis Children's Hospital. "His knowledge and expertise will have a significant impact on the children of St. Louis, as well as academic pediatric surgery at Washington University and across the country."

Martin's clinical interests lie in gastrointestinal surgery, particularly intestinal rehabilitation surgery, neonatal surgery and thoracic surgery. His research has focused on understanding the effects of maternal environmental stress on the development of newborns' intestinal immune systems, and how disturbances to the infant intestinal immune system contribute to intestinal diseases of prematurity such as necrotizing enterocolitis, a life-threatening illness involving inflammation of the newborn gut.

In addition to his work in the operating room and the lab, Martin is a leader in promoting diversity, equity and inclusion in surgery. In a recent study examining gastroenterology and gastrointestinal surgery departments, he showed that hospitals with higher-ranked departments had a greater degree of diversity in their faculty and were more likely to emphasize diversity in their mission statements than hospitals with lower-ranked departments. Another study revealed that female and Black surgeons tended not to receive national leadership opportunities commensurate with their accomplishments.

"Many sectors, including academic surgery, have historically done poorly in creating and sustaining a diverse and culturally competent workforce," Martin says. "The data is clear that diverse teams perform better. This concept not only includes diversity of race and ethnicity, but also of age, background and experience. The Washington University Department of Surgery has shown a commitment to promoting DEI learners, faculty and staff. I am excited to join this group and continue to enhance this important mission."

Martin succeeds **Brad Warner**, MD, the Jessie L. Ternberg, MD, PhD, Distinguished Professor of Pediatric Surgery, who has led the division since 2007. Warner will remain on the faculty and continue caring for patients, mentoring trainees and conducting research.

Division of Plastic and Reconstructive Surgery

Our plastic and reconstructive surgeons are experts in all areas of cosmetic, oncologic and general reconstructive surgery. The division is an international center for nerve injury and pioneer of peripheral nerve transfers. Faculty are leaders in basic, translational and clinical research, including clinical outcomes research and bench-to-bedside discoveries in nerve research and tissue engineering. Building on a legacy of training leaders and innovators, the division's residency and fellowship programs offer comprehensive training, outstanding mentorship and exposure to advanced surgical technology.

Our Year in Numbers

5,938
operating room cases

40,794
visits

22
faculty

5,912
office procedures

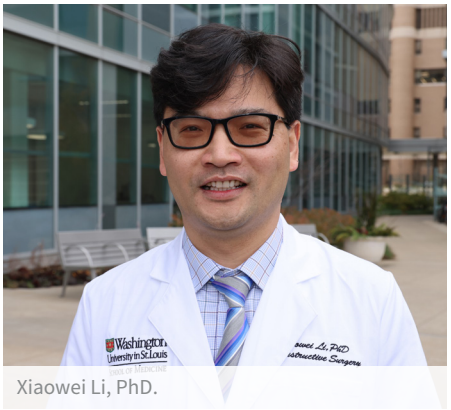
153
clinical research studies

$3,538,896
research funding

Highlights

Néha Datta, MD.

Kelly Currie, MD.



Xiaowei Li, PhD.

Clinical

In 2023, **Néha Datta**, MD, joined the Division of Plastic and Reconstructive Surgery as an assistant professor. Datta earned her medical degree from Harvard Medical School and Massachusetts Institute of Technology before completing her plastic surgery residency at Johns Hopkins Medical School. She completed a craniofacial and facial plastic and reconstructive surgery fellowship at SUNY Upstate Medical University. "The addition of Dr. Datta to our faculty brings a vital and unique set of skills to our team," says **Justin Sacks**, MD, MBA, chief of the division. "Her expertise in robotic and head and neck surgery will help us grow in these key clinical areas."

Education

For over a century, the plastic surgery residency program has been at the forefront of training future leaders in the field. The six-year integrated program, led by **Alison Snyder-Warwick**, MD, and **Kelly Currie**, MD, accepts four residents each year. The division also offers a rigorous one-year hand surgery fellowship led by program director **Ida Fox**, MD, and a microsurgery fellowship led by **Justin Sacks**, MD, MBA, and associate program directors **Rachel Anolik**, MD, and David Brogan, MD, MSc, a Washington University orthopedic surgeon. "With a world-class residency program, two advanced fellowships and our growing involvement in medical student education, this is an exciting time to be a plastic surgery trainee or educator at Washington University," says Currie.

Research

The division is home to three active R01 grants from the NIH. **Xiaowei Li**, PhD, and **Justin Sacks**, MD, MBA, are leading a study of a 3D-printed antithrombogenic sutureless device for vascular anastamosis. The longstanding peripheral nerve research program, led by **Matthew Wood**, PhD, and **Susan Mackinnon**, MD, has led to numerous translational advances in the treatment of nerve injury. Pediatric plastic surgeon **Kamlesh Patel**, MD, is in collaboration with Washington University radiologists on a study of MRI for pediatric cranial imaging. Each area of research in plastic and reconstructive surgery is supported by the division's strong commitment to research infrastructure.

Rachel Anolik, MD.

Care at the Highest Level

Washington University plastic and reconstructive surgeons provide comprehensive care across ten sub-specialties spanning the breadth of cosmetic, general and oncologic reconstructive surgery. The division, led by **Justin Sacks**, MD, MBA, has seen significant recent growth in clinical volume.

One major contributing factor to this growth has been the expansion to more hospital locations throughout the St. Louis region. In addition to Barnes-Jewish Hospital, faculty from the Division of Plastic and Reconstructive Surgery see patients at Barnes-Jewish West County Hospital, St. Louis Children's Hospital, Christian Hospital, Progress West Hospital, and Alton Memorial Hospital in Illinois*.

"Plastic surgery encompasses head-to-toe cancer, trauma and aesthetic reconstruction," says Sacks, who is division chief and Sydney M. Jr. and Robert H. Shoenberg Chair of Plastic Surgery. "We have established a number of clinical programs dedicated to achieving the highest level of patient care in each area of our specialty."

Those clinical programs include hand surgery, led by **Mitchell Pet**, MD, director of hand and upper extremity surgery. Hand surgeons within the division provide care for degenerative, traumatic, congenital and oncologic problems.

At West County Plastic Surgeons of Washington University, **Marissa Tenenbaum**, MD, serves as director of aesthetic surgery for the division. Tenenbaum, **Terence Myckatyn**, MD, and a team of plastic surgeons provide cosmetic surgical services for the face and body across the division's clinical locations.

Breast surgeons in the division offer aesthetic and oncologic reconstructive surgery. **Rachel Anolik**, MD, focuses a significant portion of her practice on breast reconstruction following mastectomy. In 2023, Anolik partnered with surgical oncologist Rebecca Aft, MD, PhD, to perform breast reconstruction following the first single-port nipple-sparing mastectomy at Barnes-Jewish Hospital. Anolik and Aft are exploring ways to deliver convenient, comprehensive oncologic and reconstructive care to breast cancer patients with the best possible results.

"The sky is truly the limit at Washington University," says Sacks. "We have expert surgeons and investigators in all areas of our specialty, and those faculty are encouraged to pursue greatness for our patients. Everything that we do—from the clinic and operating room to the research laboratory—it's all for the betterment of patient care across plastic and reconstructive surgery."

**Clinical Services in Illinois provided by Washington University Physicians in Illinois, Inc.*

Division of Public Health Sciences

This division opens doors for investigators across disciplines to connect and collaborate on projects affecting clinical care and outcomes. Faculty include epidemiologists, statisticians, behavioral scientists, economists, health communication scientists and more who address a range of current and future challenges. Their aim is to prevent cancer and other diseases, promote population health and improve quality and access to health care in the region. The division offers a Master of Population Health Sciences degree for training in population-based clinical outcomes research to educate the next generation of leaders in this field.

Our Year in Numbers

14 MPHS graduates

251 publications

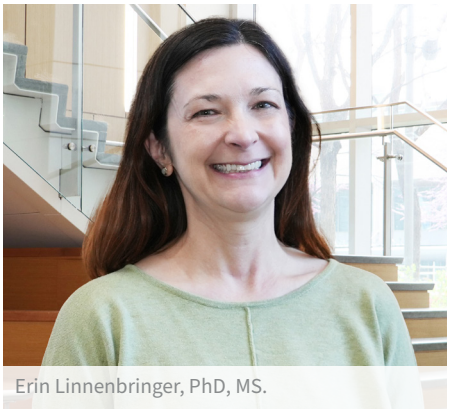
29 faculty

27 MPHS students

154 clinical research studies

$9,774,690 research funding

Highlights



Erin Linnenbringer, PhD, MS.

Yikyung Park, ScD.

Jean Hunleth, PhD, MPH.

Clinical Research

The Washington University Participant Engagement and Cancer Genome Sequencing Center, funded through the National Cancer Institute's Cancer Moonshot program in 2021, aims to address disparities in cancer research, treatment and outcomes in populations underrepresented in research. A critical component of this program is focused on communicating complex genetic health information back to participants. Expert public health faculty and staff, including **Erin Linnenbringer**, PhD, MS, an associate professor of surgery, Christine Marx, MA, and Carrie Stoll, MPH, MSW, are working alongside specialists from across the School of Medicine to provide optimal genetic counseling to program participants from around the country.

Education

The Master of Public Health Science, a degree that prepares public health leaders with skills and knowledge needed to address health outcomes for patient populations, introduced the Certificate in Health Equity and Disparities to address growing awareness of factors such as race, ethnicity, socioeconomic status, and other characteristics contributing to poorer health outcomes. "There is no formal training for understanding why health inequalities happen and developing skills to assess the problem and implement effective solutions," says **Yikyung Park**, ScD. "This offers the opportunity to learn and develop interdisciplinary skills to address health disparity." Physicians, clinical doctorates, and medical and health sciences students may develop health equity projects in their areas of interest or work with faculty on ongoing studies.

Research

Cervical cancer is the leading cause of cancer death in Zambia. While studies show that HPV vaccination can prevent 90% of cervical cancers, vaccination rates in Zambia are low, particularly among adolescent girls 9-15 years of age. REACH (Reaching for Equity in Adolescent Care through HPV Vaccination), a five-year study funded by the NCI and led by **Jean Hunleth**, PhD, MPH, and **Michelle Silver**, PhD, ScM, uses ethnographic research and stakeholder engagement to integrate HPV vaccination into routine care in local adolescent HIV clinics. In August 2023, the team presented one-year ethnographic findings to an audience of investigators funded under the U01 Implementation Science for Cancer Control in People Living with HIV in Low- and Middle-Income Countries at a meeting in Abuja, Nigeria.

Graham Colditz, MD, DrPH, left, and Shu (Joy) Jiang, PhD.

Tracking Tissue Density for Prevention

The scientific community agrees that dense breast tissue is associated with the development of breast cancer. However, a study led by investigators in the Division of Public Health Sciences and the Department of Radiology at Washington University School of Medicine in St. Louis suggests that a new way of measuring changes in breast density may improve clinicians' ability to identify women at higher risk of breast cancer.

Shu Jiang, PhD, an associate professor of surgery, published results from a longitudinal study designed to evaluate change in breast density over time. The study, published in JAMA Oncology, tracked participants from the Joanne Knight Breast Health Cohort at Siteman Cancer Center. From the cohort of over 10,000 women, 289 developed cancer over the course of a 10-year study.

The rate of density change over time was not apparent in patients when using the combined average density of both breasts. It was when each breast was regarded individually that the significant difference became apparent in the breast that developed cancer. The study found that women with a slower decrease in breast density had a higher risk of developing breast cancer.

Jiang urges tracking the rate of breast density decline in patients as a measure to detect incursion of cancer. "Women have mammograms at regular intervals throughout their lives, and the density of each breast is measured each time," she says. She suggests considering patients' ongoing history of mammographic data to track the rate of breast density over time.

In a New York Times article about this study, Karen Knudsen, chief executive of the American Cancer Society, agrees with Jiang's suggestion and notes that this study is novel in its examination of changes from breast to breast over time.

The study's senior author, **Graham Colditz**, MD, DrPH, who is chief of the Division of Public Health Sciences, emphasizes the importance of implementing these findings into clinical practice. "The dynamic changes in density over time, seen in our study, may be used to refine risk stratification," says Colditz, the Niess-Gain Professor of Surgery. "We hope to see physicians use this information to guide more individualized screening and prevention approaches."

Division of Urologic Surgery

Our urologists are leaders and pioneers in their field. The history of innovations and cutting-edge treatments within this division contribute to its ranking among the top urologic surgery centers in the country by U.S. News & World Report. Faculty offer a range of treatment options, both surgical and nonsurgical, for conditions of the urogenital tract. The division is nationally recognized for its research on detection and risk stratification of prostate cancer. The residency and fellowship programs train outstanding physicians through high volume, diversity of cases and spirit of inquiry.

Our Year in Numbers

10,464
operating room cases

60,659
visits

29
faculty

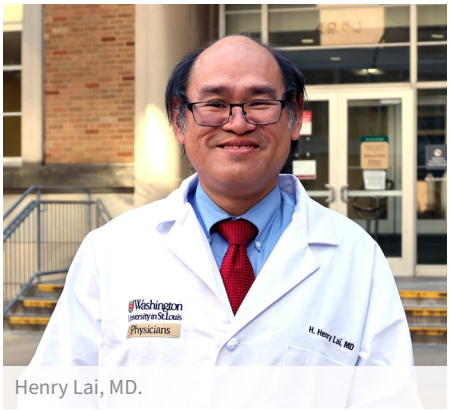
18,937
office procedures

61
clinical research studies

$3,118,699
research funding

Highlights

Michael Johnson, MD.



Henry Lai, MD.

Duminduni Yashoda, BS, left, and Kiran Mahajan, PhD.

Clinical

The Division of Urologic Surgery continues to expand clinical programs to serve more patients with urologic cancers, men's health conditions and other urologic issues across the St. Louis region. In 2023, **Charles Jones**, MD, joined the division as an assistant professor of surgery. Jones, who completed urology residency training at University of Kansas Medical Center and a male genitourinary reconstruction and trauma fellowship at University of California, San Francisco, joins **Michael Johnson**, MD, professor of surgery, in seeing patients at Missouri Baptist Medical Center. "The expansion of this practice across the BJC HealthCare system is a testament to our strong focus on providing the highest quality urologic care in the region," says Johnson, who serves as interim chief of urology.

Education

The five-year urology residency program, led by **Henry Lai**, MD, accepts four new residents each year. For over a century, the residency has trained future leaders in urologic surgery. In 2022, Lai served as session moderator for the interstitial cystitis session at the American Urological Association Annual Meeting in New Orleans. His recent focus with Urinary Stone Disease Research Network (USDRN) published findings from the Study to Enhance Understanding of Stent-Associated Symptoms (STENTS). His range of expertise is an asset for residents seeking guidance in the program. "With direction from our leadership, we are able to focus our research on personal interests, such as minimally-invasive surgical approaches to prostate and kidney cancer," says urology resident **Nick Pickersgill**, MD.

Research

Urologists are experts in prostate cancer detection using PSA, MRI and innovative targeted biopsy strategies. They offer a full spectrum of therapies from active surveillance to focal ablation, to complete prostate removal. **Eric Kim**, MD, who specializes in robotic urologic surgery has partnered with **Nupam Mahajan**, PhD, and **Kiran Mahajan**, PhD, researching life-saving therapy techniques for solid tumor cancers. The Mahajan laboratory has made remarkable strides in research. In 2022 they pioneered the use of immunotherapy to treat tumors, publishing their findings on castration-resistant prostate cancer. "We need to develop better therapies for prostate cancer patients, because most of these tumors develop resistance to hormone-based therapies doctors rely on to treat these cancers," says Nupam Mahajan.

Patient Mark Autry, left, and Zeynep Gul, MD, right.

Effective Care for Urologic Cancers

Expanding cancer survival is a major focus of clinical care in the division. Among the many success stories in 2023 is Mark Autry, who was diagnosed with prostate cancer and was treated by Washington University urologist **Zeynep Gul**, MD. "Together they came up with the plan that was right for me," says Mark. "I knew she was the right choice for me because her expertise is in robotic surgery, which I believe is the most effective type of treatment for my condition."

The division continues to expand access to care for patients suffering from a wide variety of urologic conditions, including prostate cancer and kidney cancer. In partnership with Barnes-Jewish Hospital, the section provides prostate cancer care across BJC Network locations, including Missouri Baptist Hospital, St. Peters Hospital, and Memorial Hospital Belleville.

Sam Bhayani, MD, MS, and **Michael Johnson**, MD, are committed to providing the most effective care for patients, using the latest therapy techniques, combined with state-of-the-art equipment. They are now able to provide advanced procedures and treatments such as fusion biopsies, robotic surgery and focal therapy across these network locations.

The team of surgeons offers a broad spectrum of care throughout the communities surrounding St. Louis with innovative techniques that cater to each individual on a case-by-case basis.

In efforts to increase access to care, some doctors are taking patient education into their own hands. "I am dedicated to closing the disparity gap for prostate screenings in men from low-income zip codes," says **Arnold Bullock**, MD. "There is clearly an increased incidence of prostate cancer among black men." Bullock promotes cancer screenings in the community outside of the clinic to raise awareness.

From cancer surgeons to reconstructive specialists, the division achieves excellence in patient care, research and education.

Some surgeons in urology specialize in areas outside of cancer care. **Dane Johnson**, MD, specializes in men's health and infertility. He says, "Infertility is a unique field of urology because it allows providers to interact with relatively young, healthy people who have not expected to have any issues at this point in their life."

Other urologists specialize in education, focusing on techniques first pioneered at WashU. Bhayani developed a technique for robotic partial nephrectomy, or removal of part of the kidney. Since its development, the procedure has been adopted around the world.

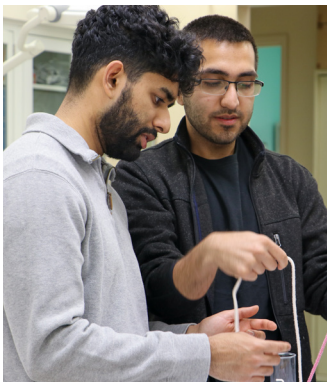
In an effort to extend access to care, "The first step to a positive outcome is getting in touch with a physician and coming up with a plan," says Gul.

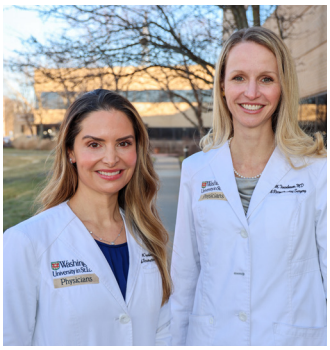
**Clinical services in Illinois provided by Washington University Physicians in Illinois Inc.*

Washington University Surgery

Our faculty, staff and trainees represent a diverse range of specialties united by a tripartite mission. Our people make significant individual contributions to their fields, and, together, we achieve a lasting impact on academic surgery.

Top: Susan Mackinnon, MD, right.
Middle left (from left): Maria Majella Doyle, MD, MBA, Jo Shapiro, MD, and Mary Politi, PhD.
Middle right (from left): Randall Pierrot, MD, Karim Saoud, MD, Amanda Spielman, MD, and William Moritz, MD.
Bottom left: Ryan Wahidi, MD, right, teaching a medical student.
Bottom middle: Bettina Drake, PhD, MPH, left, Erika Waters, PhD, MPH.
Bottom right (from left): Mohamed Zayed, MD, PhD, MBA, Bethany Sacks, MD, MEd, and Helen Li, MD.





The future of surgery is bright. At Washington University School of Medicine in St. Louis we are training future leaders, investing in groundbreaking research, providing the best in patient care and advancing the diversity and health equity of our specialty.

Sam B. Bhayani, MD, MS

Top left: Nupam Mahajan, PhD, left, and Kiran Mahajan, PhD.
Top right: Oluseye Oduyale, MD, teaching high school students in the WISE Center.
Top bottom right: Marissa Tenenbaum, MD, left, and Alison Snyder-Warwick, MD.
Middle left: Thomas Tung, MD.
Middle right (from left): William Chapman, MD, Adeel Khan, MD, MPH, John Olson Jr., MD, PhD, and Mahendra Bhandari, from the Vattikuti Foundation.
Bottom top right (from left): Angie DeClue, CST, Karen Schubert, BS, and Peggy Frisella, BSN.
Bottom left: Adetunji Toriola, MD, PhD, MPH.
Bottom right: General surgery residents at the welcome picnic.

Department of Surgery Research

The department's research enterprise is among the largest of its peers in the United States. A leader in National Institutes of Health (NIH) funding among its peers nationwide, it encompasses a full spectrum of robust basic science, clinical and public health sciences research.

Breakthroughs made by our department investigators, many of which serve as full-time operating surgeons, are critical to the clinical development in fields such as oncology, immunology, pancreas and breast cancer research, among many others.

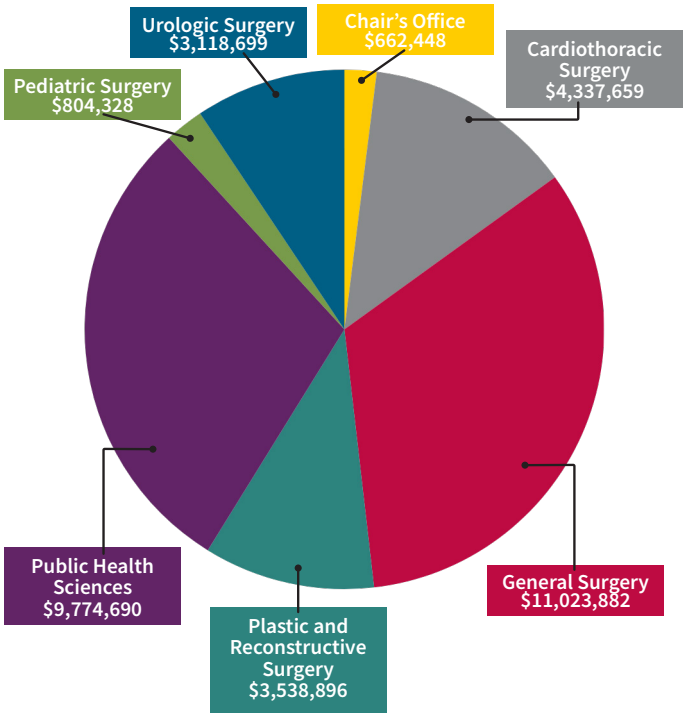
149
active grants

$33,260,602
research grant funding

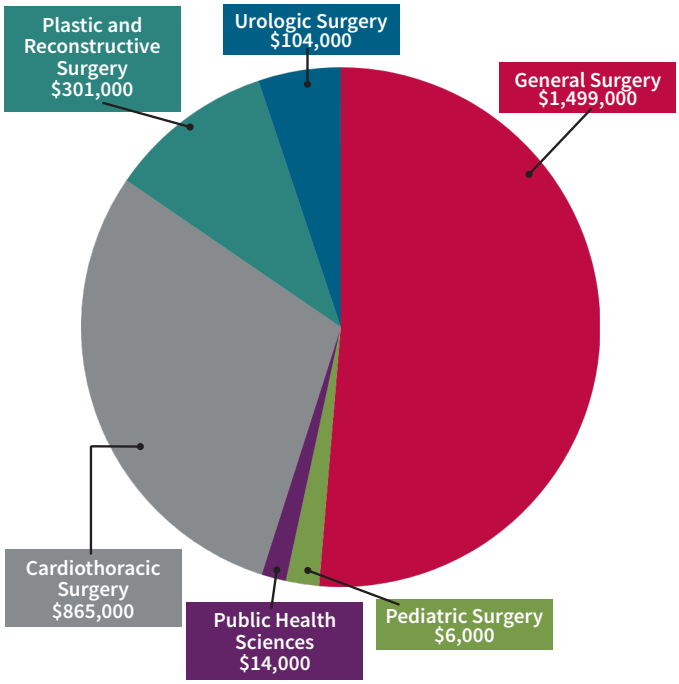
944
clinical research studies

$2,789,000
clinical trial contract income funding

RESEARCH GRANTS BY DIVISION



CLINICAL STUDY CONTRACT INCOME BY DIVISION



FUNDING ABOVE $1,000,000

CHAIR'S OFFICE

John Olson Jr., MD, PhD
NIH R01 / Parathyroid Tumor Clonal Status as Biomarker in Primary Hyperparathyroidism
12/01/22-11/30/27: $1,350,550

DIVISION OF GENERAL SURGERY

Section of Hepatobiliary-Pancreatic and GI Surgery

Dirk Spitzer, PhD
NIH R01 / Preclinical Development of the Novel Inhibitor of Apoptosis Proteins S2/IAPinh for Cancer Therapy
12/29/22-11/30/27: $1,787,783

Isaiah Turnbull, MD, PhD
Department of Defense / Adjuvant Immunotherapy to Reverse Immunosuppression in Burn-Injured Patients with Antibiotic-Resistant Infections
12/29/22-11/30/27: $1,407,585

Section of Surgical Oncology

Ryan Fields, MD
NIH R38 / StARR Program in Cross-Disciplinary Oncology Clinician-Scientist Training
02/01/23-01/31/28: $2,115,265

Section of Transplant Surgery

Jae-Sung Kim, PhD
NIH R01 / Autophagy in Liver Injury
02/15/23-01/31/27: $1,832,129

DIVISION OF PLASTIC AND RECONSTRUCTIVE SURGERY

Ida Fox, MD
Department of Defense / Expanding Knowledge and Information Delivery Around Improving Upper Extremity Function After Cervical Spinal Cord Injury
09/01/22-08/31/25: $1,497,516

Xiaowei Li, PhD
NIH R01 / Bioengineered Composite for the Treatment of Peripheral Arterial Disease
04/01/23-03/31/27: $1,996,307

DIVISION OF PUBLIC HEALTH SCIENCES

Jean Hunleth, MPH, PhD
NIH U01 / Leveraging HIV Infrastructure to Implement Cervical Cancer Prevention: A Study to Integrate HPV Vaccination in Adolescent HIV Clinics in Zambia
09/06/22-08/31/27: $3,331,319

Ying Liu, MD, PhD
NIH R01 / Impacts of Neighborhood Contexts and Medicaid Policy on Lung Cancer Survival in Low-SES Patients
07/15/22-06/30/26: $1,449,972

Erika Waters, MPH, PhD
NIH R01 / Investigating ELSI Issues that May Facilitate or Impede Clinical Translation of Epigenomic Research
09/06/22-06/30/27: $2,811,088

DIVISION OF UROLOGIC SURGERY

Nupam Mahajan, PhD
NIH R01 / Regulation of Mitochondrial Metabolism by Tyr-phosphorylated ATP Synthase Alpha-Subunit and its Therapeutic Implications in Prostate Cancer
04/01/23-03/31/28: $2,327,806

FUNDING ABOVE $100,000

DIVISION OF CARDIOTHORACIC SURGERY

Section of Cardiac Surgery

Christian Zemlin, MD, MSc
Pulse Biosciences, Inc. / Ablation of Cardiac Tissue with Nanosecond Pulsed Electric Fields
03/10/23-03/09/24: $300,000

DIVISION OF GENERAL SURGERY

Section of Transplant Surgery

William Chapman, MD
NIH U34 / Autophagy in Liver Injury
03/15/23-02/28/25: $691,437

Section of Vascular Surgery

Mohamed Zayed, MD, PhD, MBA
Mid-America Transplant Foundation / Platform for Xenographic Transplantation of Human Pancreatic Islets
08/01/22-07/31/25: $449,9331

DIVISION OF PLASTIC AND RECONSTRUCTIVE SURGERY

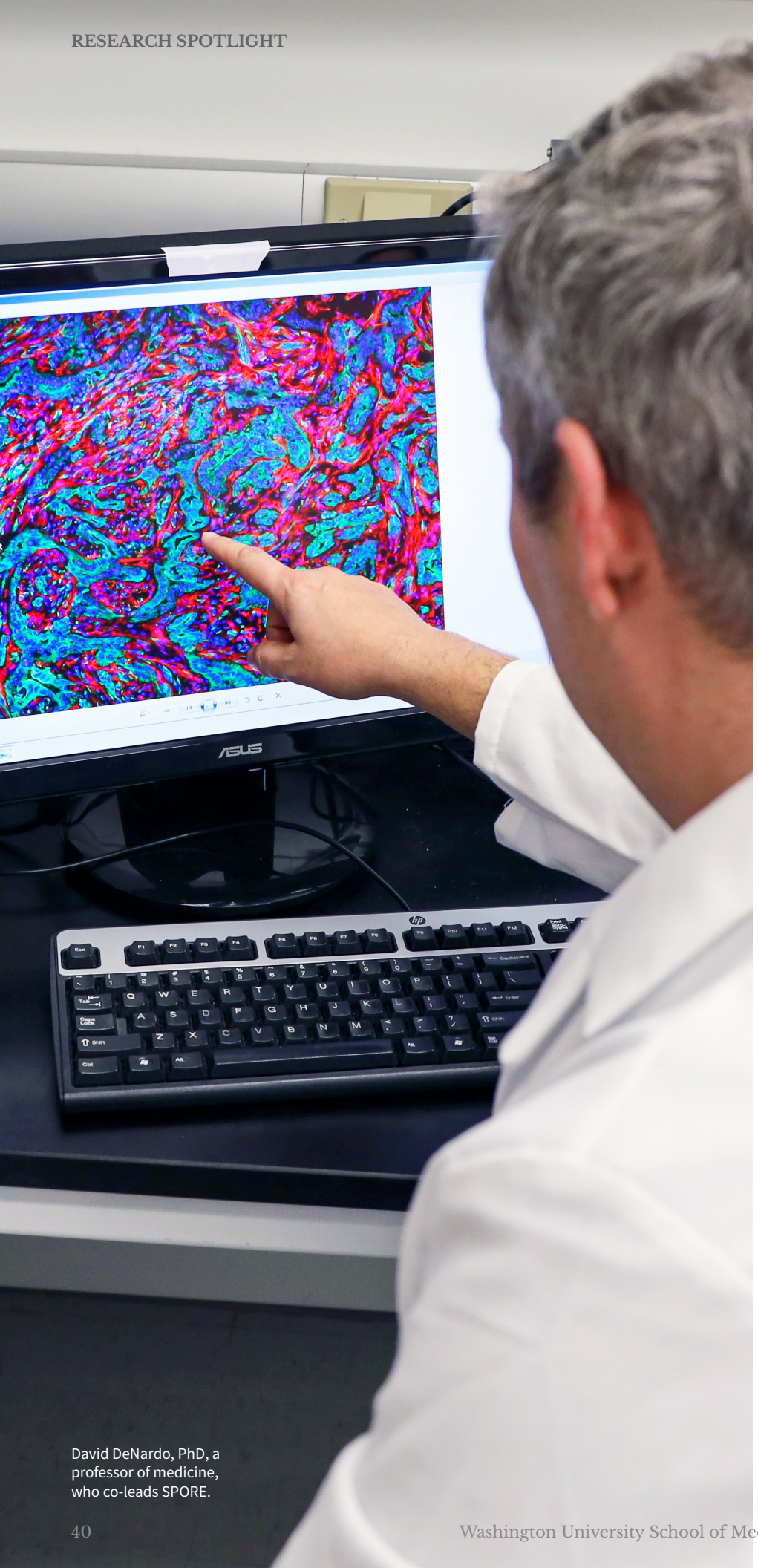
Xiaowei Li, PhD
Department of Defense / 3D-Printed Antithrombogenic Sutureless Device for Vascular Anastomosis
01/01/23-12/31/24: $305,857

Xiaowei Li, PhD
Department of Defense / Engineering Glial Scar for Brain Tissue Regeneration After Traumatic Injury
08/01/22-07/31/24: $300,000

DIVISION OF PUBLIC HEALTH SCIENCES

Siobhan Sutcliffe, PhD, ScM, MHS
NIH R01 / Food-Specific Antibodies and Urologic Chronic Pelvic Pain Syndrome
09/15/22-08/31/25: $704,007

Washington University Department of Surgery is the third highest ranking department in NIH funding according to the Blue Ridge Institute for Medical Research in 2022.



David DeNardo, PhD, a professor of medicine, who co-leads SPORE.

SPORE in Pancreatic Cancer Supported With $10.9 Million NCI Grant

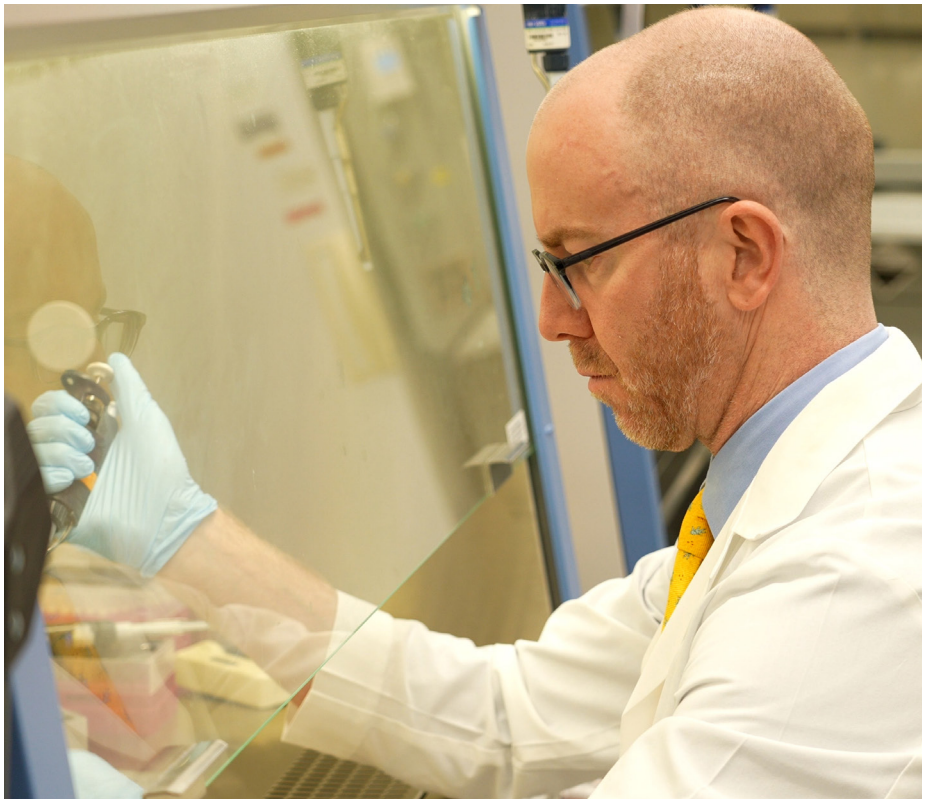
Researchers at Washington University School of Medicine in St. Louis have received a prestigious Specialized Programs of Research Excellence (SPORE) grant from the National Cancer Institute (NCI) of the National Institutes of Health (NIH) to support research and clinical trials aimed at improving therapies for pancreatic cancer.

The five-year grant will provide about $10.9 million to research programs for the development of new therapies for pancreatic ductal adenocarcinoma, the deadliest form of pancreatic cancer. Fewer than 10% of patients with this cancer survive longer than five years after diagnosis.

The SPORE is co-led by David DeNardo, PhD, a professor of medicine; **Ryan Fields**, MD, the Kim and Tim Eberlein Distinguished Professor and chief of the Section of Surgical Oncology in the Department of Surgery; and **William Hawkins**, MD.

“We are hopeful we can improve the outcomes for patients with pancreatic cancer with key support from this grant,” said principal investigator DeNardo, a research member of Siteman Cancer Center, based at Barnes-Jewish Hospital and Washington University School of Medicine. “The new strategies we will investigate are very thoughtful about the immunology and stromal biology of these tumors.”

The funding will support three major research projects: One is aimed at a strategy to make this form of pancreatic cancer sensitive to immunotherapy; a second investigates ways to make the cancer respond to vaccines that target specific antigens on the tumor; and a third will explore an anti-inflammatory compound that has the potential to make pancreatic cancer more vulnerable to chemotherapy.



Ryan Fields, MD, working in his lab.

"In recent years, we have made some small progress in improving the survival rate for patients with this cancer, but we hope for much more," Hawkins said. "The science behind these latest innovations in pancreatic cancer therapy is promising. We look forward to bringing these innovations to our patients through several new clinical trials."

The new grant also provides funding for resources supporting all of these research initiatives, including a biospecimen core; a biostatistics and bioinformatics core; an administrative core; and programs for innovative research and career development to recruit and mentor early-career investigators focused on understanding and treating pancreatic cancer.

In one clinical trial, the researchers will investigate therapeutic strategies that block cells that suppress the immune system from attacking the tumor. An immunosuppressive environment prevents T cells from being able to find and kill the cancer cells. Preclinical research has shown that reprogramming these immunosuppressive cells improves T cell response. If activated T cells are able to infiltrate the tumor, this may make pancreatic cancer responsive to immune checkpoint inhibitors that further boost the function of anti-tumor T cells. This project is led by DeNardo and Katrina Pedersen, MD, an associate professor of medicine.

A second clinical trial will optimize anticancer vaccines to treat pancreatic ductal adenocarcinoma and seek to understand the ways tumors develop resistance to such vaccines. This type of vaccine can help train the immune system to attack tumors that produce abnormal proteins that are unique to the tumor. Zeroing in on those proteins would allow the T cells to specifically attack the cancer cells. This work is led by Hawkins; **William Gillanders**, MD, a professor of surgery in the Section of Surgical Oncology; and Robert Schreiber, PhD, the Andrew M. and Jane M. Bursky Distinguished Professor.

In a third clinical trial, researchers will investigate a compound, called ATI-450, that inhibits a molecule, called MK2, that is critical in allowing pancreatic tumor cells to survive chemotherapy. Preclinical studies in mice have shown that combining the compound with FOLFIRINOX—a combination of four generic cancer drugs that together make up the front-line chemotherapy for pancreatic cancer—makes the cancer cells more vulnerable to the chemo. This project is led by Kian-Huat Lim, MD, PhD, an associate professor of medicine; and Gregory Beatty, PhD, of the University of Pennsylvania.

"This chemotherapy has toxic side effects and typically only works for about six months," said Lim, who treats patients at Siteman. "We plan to investigate this compound in combination with chemotherapy in patients with stage 4 pancreatic cancer. Not only do we see in mouse models that the compound makes the chemotherapy more effective, there is also evidence that it reduces some of the intestinal toxicity that is common with FOLFIRINOX. We are hopeful we can achieve two goals with this combination therapy: more effective and less toxic treatment."

Added Hawkins: "We are grateful to our patients, many of whom choose to participate in clinical trials to help others and to have an opportunity to try new and innovative therapies. There is strong science behind all of these trials, and we're hopeful we will be able to improve outcomes for our patients."

William Hawkins, MD, a leader in the SPORE lab.

Department of Surgery Education Overview

Residents and fellows training within the Department of Surgery's leading educational programs gain knowledge from internationally recognized academic surgeons. Shaped by leaders who are experts in developing surgical curriculum, the programs within the department offer early specialization options, participation in academic research and hands-on clinical and simulation training.

BY THE NUMBERS

5th
in the United States general surgery residency program*

4
residency programs

19
fellowship programs

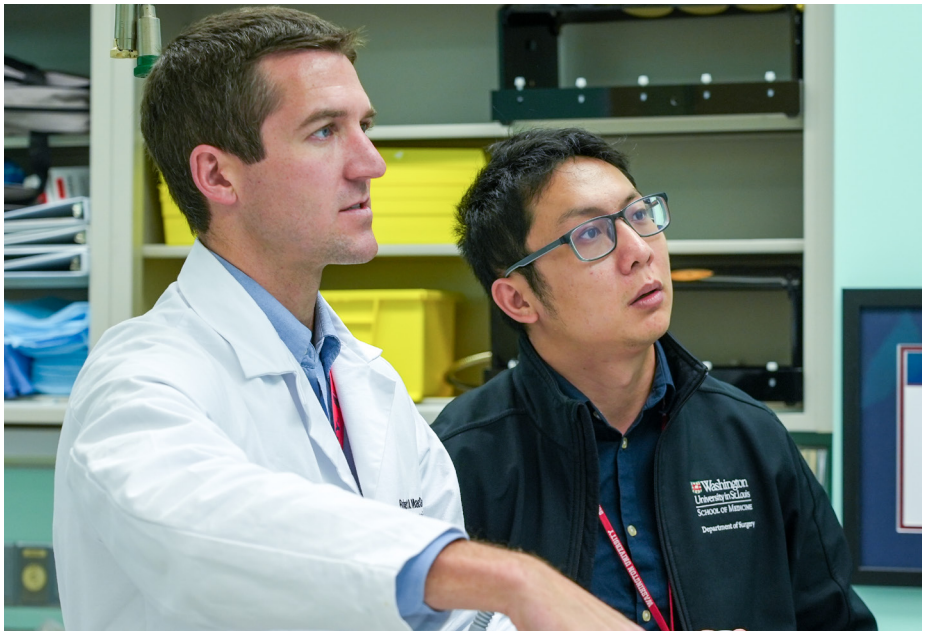
**According to Doximity's Residency Navigator*

Top: Jennifer Yu, MD, MPHS, left, the new general surgery residency program director, and Tiffany Brocke, MD, the WISE fellow.
Middle (from left): David Chi, MD, PhD, a medical student, and Abdullah Said, MD.
Bottom (from left): Abigail Chmiel, MD, Jorge Zárate Rodriguez, MD, and Varun Dalmia, MD.

Paul Wise, MD, has been named Vice Chair for Education in the Department of Surgery.

A highly regarded surgeon and educator, Wise has served as general surgery residency program director since 2014 while overseeing expansion of the residency, extension to varied rotation sites, and broadening of residency recruitment efforts. Wise was selected as an inaugural fellow in the Academy of Educators in 2019 and named to the Academy of Educators Honor Roll in 2022, where he now serves on the Awards and Tech-Enhanced Learning subcommittees, among others. Nationally, Wise is a member of the American College of Surgeons, American Society of Colon and Rectal Surgeons, Association for Surgical Education, and Association of Program Directors in Surgery.

"It is truly the highest honor to be chosen for this position. The Department of Surgery at Washington University has been leading the way in surgical education for decades. In the last twenty years alone, we have led efforts in simulation, assessment, and flexibility in training/early specialization, in addition to fostering unique and expansive opportunities for the trainees in research and professional development," says Wise.



Robert MacGregor, MD, left, and Jack Zheng, MD.

Washington University Institute for Surgical Education

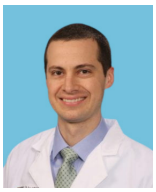
The Washington University Institute for Surgical Education (WISE) is a 3,400-square foot educational space offering a variety of surgical skills labs and simulation trainings. Founded in 2001, WISE began as one of the first surgical skills labs in the country. In 2013, WISE was certified by the American College of Surgeons as a Level 1 Accredited Education Institute (ACS-AEI) for surgical education. Today, WISE hosts close to 1,000 educational events per year for a diverse group of learners from within the medical school, across the region and programs nationwide. Visit wise.wustl.edu to learn more.

ACS-AEI Fellowship

WISE offers a two-year education fellowship to develop future leaders and scholars in surgical education, simulation and training. WISE fellows have developed advanced simulation labs, implemented training programs for learners and published research on surgical education.

Our Team

Michael Awad, MD, PhD, MHPE
WISE Director



Jeffrey Blatnik, MD
Director of Surgical Programs

Peggy Frisella, BSN
WISE Administrator

Gretchen Blow, MSL, EdD
WISE Administrator

Angie DeClue, CST
Education Service Coordinator

Karen Schubert, BS
Education Service Coordinator

Tiffany Brocke, MD
WISE Fellow

Will Gerull, MD
WISE Fellow

Our Mission

- Promote the education of health care professionals and learners
- Advance the field of surgical education through educational research
- Improve the welfare of the greater patient community

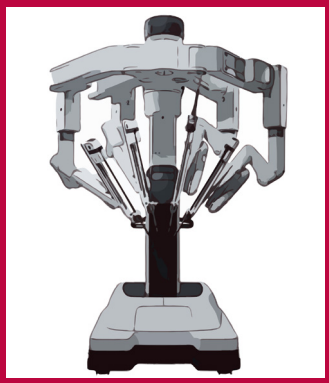
Community Engagement

In addition to training residents and other health care learners, WISE partners with community programs to offer high school students interested in medical careers firsthand experience.

High school students visit WISE.

WISE Offerings

- Fundamentals of Laparoscopic Surgery (FLS)
- Fundamentals of Endoscopic Surgery (FES)
- Fundamental Use of Surgical Energy (FUSE)
- Foundational, intermediate and advanced skills labs
- Simulation training ranging from low-tech suturing models to the latest virtual reality simulators
- Official training center for Intuitive Surgical



Da Vinci Xi robot.

Our Residency Programs

The Department of Surgery at Washington University School of Medicine in St. Louis is home to four nationally recognized surgical residency programs. The general surgery, vascular surgery, urology, and plastic and reconstructive surgery residencies train future leaders in each surgical specialty. Trainees benefit from innovative simulation training at the Washington University Institute for Surgical Education, a high clinical volume of diverse cases, and world-class research programs.

GENERAL SURGERY RESIDENCY PROGRAM

Paul Wise, MD
Program Director
Christa Donald
Senior Residency Coordinator
Kelly Stockstill
Assistant Residency Coordinator

PLASTIC AND RECONSTRUCTIVE SURGERY RESIDENCY PROGRAM

Alison Snyder-Warwick, MD
Program Director
Kelly Currie, MD
Associate Program Director
Emily Stroisch
Residency Coordinator

UROLOGIC SURGERY RESIDENCY PROGRAM

H. Henry Lai, MD
Program Director
Alexis French-Parkinson
Senior Residency and Fellowship Coordinator

VASCULAR SURGERY RESIDENCY PROGRAM

J. Westley Ohman, MD
Program Director
Katherine Holzem, MD, PhD
Associate Program Director
Nikki Althage
Residency and Fellowship Coordinator

OFFICE OF SURGICAL EDUCATION STAFF

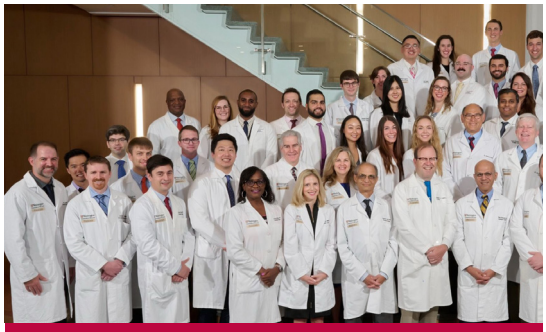
Leanna Bell
Assistant Director of Education
Angela Colbeck
Office Administration Fellowship Coordinator

General Surgery

Since 1919, the general surgery residency has been consistently recognized as one of the top programs in the United States. This program pioneered new methods of teaching upon its establishment and continues to advance the leading edge of surgical education. Flexibility in Surgical Training (FIST) and Early Specialization Pathways (ESP) allow residents to tailor their training to the specialty of their choice and fast-track into subspecialties and fellowships. The residency includes five years of clinical experience, plus two to three years of dedicated research time. **Paul Wise**, MD, serves as the program's director.

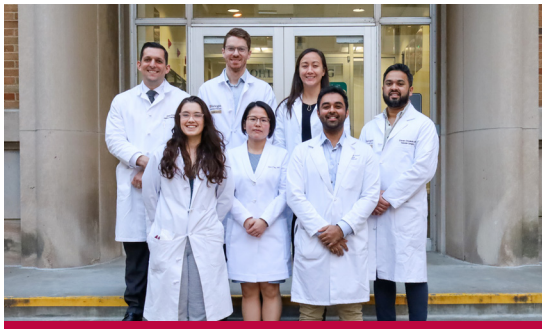
Plastic and Reconstructive Surgery

The six-year integrated plastic surgery residency was established in the early 20th century by Vilray Blair, MD, one of the founders of the specialty. This program includes training in breast, craniofacial, pediatrics, head/neck trauma, hand, microsurgery, cosmetic and peripheral nerve surgery. Residents also complete rotations in all required general surgery experiences and subspecialty rotations in oculoplastics, surgical dermatology, orthopedic trauma and anesthesia. In addition to clinical skills, the program fosters excellence in research and cultivates leadership. **Alison Snyder-Warwick**, MD, serves as program director.



Urologic Surgery

Since its establishment in 1910, the urology residency has prepared graduates for successful careers in urologic surgery. Today, urology residents are exposed to a volume and diversity of surgical cases that is among the highest in the nation. Residents complete rotations at Barnes-Jewish Hospital, St. Louis Children's Hospital, the VA St. Louis Health Care System and Barnes-Jewish West County Hospital. This five-year residency is centered on the values of teamwork, innovation, and the pursuit of excellence. **H. Henry Lai**, MD, leads the residency as program director.



Vascular Surgery

The five-year vascular surgery residency prepares trainees to excel in vascular and endovascular surgery, as well as the management of patients with vascular disease. Residents are provided with a wide range of training in the details of CT and MR imaging techniques; clinical experience in preoperative, operative, and postoperative care; and opportunities for research experience in basic science, translational studies, and clinical trials. The residency is led by program director **J. Westley Ohman**, MD.

The Department of Surgery congratulates the class of 2022-2023 graduating Chief Residents and Fellows:

Residency Graduates

GENERAL SURGERY

Erin Dawson (Andrade), MD, MPH
Ina Chen, MD
Heidy Cos Felipe, MD
Cathleen Courtney, MD
Sandra Garcia Aroz, MD
Meghan Kelly, MD
Jessica Lindemann, MD, PhD
Robert MacGregor, MD
Emily Onufer, MD, MPH

PLASTIC AND RECONSTRUCTIVE SURGERY - INTEGRATED

Jordan Bruce, MD
Lauren Jacobson Bectold, MD
Andrew Linkugel, MD
Ema Zubovic, MD

VASCULAR SURGERY - INTEGRATED

Momodou Jammeh, MD

UROLOGIC SURGERY

Kathryn Agamawi, MD
Shilipa Argade, MD
Grant Henning, MD
Laura Lee, MD

Fellowship Graduates

SURGICAL CRITICAL CARE

Caroline Couch, MD
Ben Fisher, MD
Brendan Ringhouse, MD
Karthik Sugumaran, DO, E-AEC
Nick Welko, MD
Brandon Wojcik, MD

COLON AND RECTAL SURGERY

Maggie Westfal (Cassidy), MD, MPH
Anna De Roo, MD, MSc
Beiqun Zhao, MD

MINIMALLY INVASIVE SURGERY

Douglas Cassidy, MD

ABDOMINAL TRANSPLANT

Darren Cullinan, MD, MSCI
Gregory Martens, MD, PhD

VASCULAR SURGERY

Gayan De Silva, MD
Esmaeel Dadashzadeh, MD

CARDIOTHORACIC SURGERY

Whitney Brandt, MD
Linda Schulte, MD
Tara Semenkovich, MD, MPHS

MECHANICAL CARDIAC SUPPORT

Erin Schumer, MD, MPH

PEDIATRIC SURGERY

Paul McGaha, MD

PLASTIC AND RECONSTRUCTIVE HAND SURGERY

Lauren Jacobson Bechtold, MD
Shady Elmaraghi, MD
Benjamin Timmins, MD

PLASTIC AND RECONSTRUCTIVE MICROSURGERY

Saifeddin Moh'd Admad Badran, MD, PhD

UROLOGIC ONCOLOGY

Cayce Nawaf, MD

MINIMALLY INVASIVE ENDOUROLOGY

Hayden Hill, MD
Susan Talamini, MD

The Department of Surgery trains the next generation of surgeons in all specialties. Below are the 2023-2024 trainees.

Residents

GENERAL SURGERY RESIDENCY

Joe Banton, MD	PGY 1
Abby Chmiel, MD	PGY 1
Natty Doilicho, MD	PGY 1
Genesys Giraldo, MD	PGY 1
Matt Gross, MD	PGY 1
Saad Javeed, MD	PGY 1
Chris Latour, MD	PGY 1
Adam Liebendorfer, MD	PGY 1
Kevin Naceanceno, MD	PGY 1
Adim Oyedeji, MD	PGY 1
Diego Polanco Pumarol, MD	PGY 1
Nahom Seyoum, MD	PGY 1
Mary Siki, MD	PGY 1
Colleen Witty, MD	PGY 1
Yilin Yang, MD	PGY 1
Jack Zheng, MD	PGY 1
Jose Aldana Bastidas, MD	PGY 2
Blake Beneville, MD	PGY 2
Maxwell Braasch, MD, MPH	PGY 2
Horacio Carvajal Dominguez, MD	PGY 2
Meredith Freeman, MD, MS, MPH	PGY 2
Samuel Grinberg, MD	PGY 2
Abigail Hatcher, MD	PGY 2
Charles Liu, MD	PGY 2
Fatima Mustansir, MD	PGY 2
Christopher Noda, MD	PGY 2
Ifaenyichukwu Okereke, MD	PGY 2
Nicole Santucci, MD	PGY 2
Adrienne Visani, MD	PGY 2
Tsehay Abebe, MD	PGY 3
Cameron Casson, MD	PGY 3
Julie Clanahan, MD	PGY 3
Martha McGilvray, MD, MPHS	PGY 3
Hannah Phelps, MD	PGY 3
Merrill Rubens, MD	PGY 3
Hailey Shepherd, MD	PGY 3
Shaleen Sathe, MD	PGY 3
Omolade Sogade, MD	PGY 3
Sydney Beache, MD	PGY 4
Faiz Gani, MD	PGY 4
Britta Han, MD	PGY 4
Annie Hess, MD	PGY 4
Paul Kepper, MD, MS	PGY 4
Maria Martinez, MD	PGY 4
Kenneth Newcomer, MD	PGY 4
Jorge Zarate, MD	PGY 4
Katharine Caldwell, MD, MSc	PGY 5
Connor Callahan, MD	PGY 5
Leah Conant, MD	PGY 5
Corbin Frye, MD	PGY 5
Matthew Grant, MD, MPhil	PGY 5
Alston James, MD	PGY 5
Bradley Kushner, MD	PGY 5
Ebunoluwa (Ebun) Otegbeye, MD, MPHS	PGY 5
Eileen Smith, MD	PGY 5
Allie Steinberger, MD, MPH	PGY 5

GENERAL SURGERY RESIDENCY (CONTINUED)

Louisa Bai, MD	Research
Tiffany Brocke, MD	Research
Daniel Colchado, MD	Research
Ahmed Eltahir, MD	Research
Will Gerull, MD	Research
Brendan Heiden, MD, MPHS	Research
Angela Hill, MD	Research
Helen Li, MD	Research
Ariana Naaseh, MD	Research
Oluseye Oduyale, MD	Research
Franklin Olumba, MD	Research
Usman Panni, MD	Research
Sophia Roberts, MD	Research
Nikki Rossetti, MD, MSc	Research
Kerry Swanson, MD	Research
Steven Tohmasi, MD	Research
Felicia Zhang, MD	Research
Catherine Zivanov, MD	Research

PLASTIC SURGERY RESIDENCY

William Moritz, MD	PGY 1
Randall Pierrot, MD	PGY 1
Karim Saoud, MD	PGY 1
Amanda Spielman, MD	PGY 1
Andrea Biaggi-Ondina, MD	PGY 2
Deng Pan, MD, PhD	PGY 2
Arthur Sletten, MD, PhD	PGY 2
Kevin Urlaub, MD	PGY 2
Grace Keane, MD	PGY 3
Caitlin Marks, MD	PGY 3
Abdullah Said, MD	PGY 3
Margaret (Shea) Harrison, MD	PGY 4
Anna Rose Johnson, MD, MPH	PGY 4
Jonah Orr, MD	PGY 4
Erin Peterson, MD	PGY 4
Alexandra Keane, MD	PGY 5
Damini Tandon, MD	PGY 5
Kenan Tawaklna, MD	PGY 5
William Zhu, MD	PGY 5
Danielle Brown, MD	PGY 6
David Chi, MD, PhD	PGY 6
Rachael Payne, MD	PGY 6

VASCULAR SURGERY RESIDENCY

Ryan Wahidi, MD	PGY 1
Varun Dalmia, MD	PGY 2
Shirli Tay, MD	PGY 3
Julia Suggs, MD	PGY 4
Brian Sullivan, MD	PGY 5

UROLOGIC SURGERY RESIDENCY

Liddy Di Valerio, MD	PGY 1
Shiv Kabra, MD	PGY 1
Faizan Khawaja, MD	PGY 1
Sajya Singh, MD	PGY 1
Lauren Elson, MD	PGY 2
Briana Kaplunov, MD	PGY 2
Patrick Martin-Tuite, MD	PGY 2
Riley McGinnis, MD	PGY 2
Kendrick Campbell, MD	PGY 3
James Gross, MD	PGY 3
Jay Jiang, MD	PGY 3
Amy Kuprasertkul, MD	PGY 3
Helen Kim, MD	PGY 4
Connor McCormick, MD	PGY 4
Steven Ngo, MD	PGY 4
Daniel Wong, MD	PGY 4
Hassan Alkazemi, MD	PGY 5
Nimrod Barashi Gozal, MD, MS	PGY 5
Andrew McLaughlin, MD	PGY 5
Nicholas Pickersgill, MD	PGY 5

Fellows

SURGICAL CRITICAL CARE

Christopher Dai, DO	PGY-6
Michael Keirsey, MD	PGY-6
Xujun Liu, MD	PGY-6
Vitaliy Natkha, DO	PGY-6
Lindsay Stepp, MD	PGY-6
Sindri Viktorsson, MD	PGY-6

COLON AND RECTAL SURGERY

Austin Dosch, MD, PhD	PGY-6
Harika Nalluri-Butz, MD	PGY-6
Lindsey Zhang, MD	PGY-6

MINIMALLY INVASIVE SURGERY

Maggie Bosley, MD	PGY-6
Robert MacGregor, MD	PGY-6

SURGICAL ONCOLOGY

Brittany Greene, MD	PGY-7

BREAST ONCOLOGY

Ashley Wilbers, MD	PGY-6

ABDOMINAL TRANSPLANT

Jessica Lindemann, MD, PhD	PGY-6
Brendan Lovasik, MD	PGY-6
Jesse Davidson, MD	PGY-7

VASCULAR SURGERY

Daniel Kindell, MD	PGY-6
Erin McIntosh, MD	PGY-6
Sitaram Chivukula, MD	PGY-7

CARDIOTHORACIC SURGERY

Ali Alakhtar, MD	PGY-6
Meghan Kelly, MD	PGY-6
Fatuma Kromah, MD	PGY-6
Michael Napolitano, MD	PGY-6
Rodrigo Zea Vera, MD	PGY-6
Jason Gauthier, MD	PGY-7
Ali Khiabani, MD	PGY-7
Melanie Subramanian, MD, MPHS	PGY-7

MECHANICAL CARDIAC SUPPORT

Takuya Wada, MD, PhD	PGY-7

CONGENITAL CARDIAC

Ayman Almousa, MD	PGY-8

PEDIATRIC SURGERY

Michelle Kallis, MD	PGY-6
Kristen Seiler, MD	PGY-7

PLASTIC AND RECONSTRUCTIVE HAND SURGERY

Hyosuk (Brian) Chin, MD	PGY-6
Lyahn Hwang, MD	PGY-7

PLASTIC AND RECONSTRUCTIVE MICROSURGERY

Rosemarie Rinfret-Paquet, MD	PGY-6

TRAUMA AND RECONSTRUCTIVE UROLOGY

Fernandino Vilson, MD	PGY-7

UROLOGIC ONCOLOGY

Nathan Colon, MD	PGY-7
John Sheng, MD	PGY-7

MINIMALLY INVASIVE ENDOUROLOGY

Rebekah Keller, MD	PGY-6
Ethan Vargo, MD	PGY-6

Washington University Medical Campus

For over a century, the Washington University Medical Campus has stood as the premier setting for world-class care, groundbreaking research and innovative training in the St. Louis region. The campus is home to Barnes-Jewish Hospital, St. Louis Children's Hospital and the Alvin J. Siteman Cancer Center, as well as Washington University School of Medicine in St. Louis. Together, the combined Medical Campus institutions are among the largest employers in the St. Louis metropolitan area.

The School of Medicine's clinical practice group, Washington University Physicians, consists of more than 1,700 physicians and clinicians representing more than 78 specialties and subspecialties in medicine and surgery. Patients receive leading care and advanced treatment from specialists who are members of the full-time faculty at the medical school.

Barnes-Jewish Hospital—the largest hospital in Missouri—consistently ranks among the nation's best hospitals by U.S. News & World Report. In 2022, the hospital was recognized as #11 in the nation as well as #1 in St. Louis and Missouri. The facility is registered as a Level 1 Trauma Center and acts as the School of Medicine's dedicated non-profit teaching hospital.

St. Louis Children's Hospital is the region's largest pediatric hospital and sole Level 1 Pediatric Trauma Center. It is consistently ranked among U.S. News & World Report's best pediatric hospitals in the nation. The hospital's mission—doing what is right for kids—is supported by the programs' dedication to medical discovery, innovative therapies and compassionate care.

Siteman Cancer Center is an international leader in cancer treatment, research, prevention, education and community outreach. It is the only National Cancer Institute-designated Comprehensive Cancer Center in Missouri. The 107,422-square-foot Center for Advanced Medicine houses Siteman's clinical offices, testing locations and other cancer services.

With over a dozen hospitals in the region dedicated to the well-being of the community, Washington University is extending the quality of care delivered at the medical campus into local communities, continuing the legacy of clinical, academic and research leadership for years to come.

CLINICAL LOCATIONS

Barnes-Jewish Hospital
St. Louis Children's Hospital
St. Louis Children's Specialty Care Clinic
Missouri Baptist
Barnes-Jewish West County Hospital
Christian Northeast Hospital
Barnes-Jewish St. Peters
Progress West Hospital
Memorial Hospital Belleville
Memorial Hospital Shiloh
Siteman Cancer Center
Center for Advanced Medicine South County
St. Louis VA Medical Center

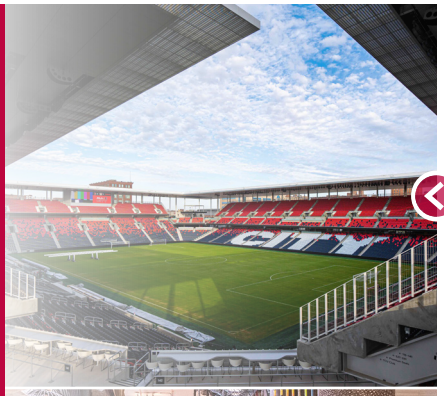
Meet Me in *St. Louis*

St. Louis was founded in 1764, quickly establishing itself as a center for transportation and trade. With major lines of transit, the "Gateway to the West" became a hub for invention. St. Louis hosted the 1904 World's Fair and Summer Olympics in Forest Park, one of the largest urban parks in the United States. Today, St. Louis still holds its place as a globally-recognized center for innovation and vibrancy, including renowned research institutions and acclaimed entertainment venues.

The city boasts historic charm and new additions among diverse neighborhoods. Popular destinations include the St. Louis Art Museum, City Museum, St. Louis Zoo, Missouri Botanical Garden and Busch Stadium. The city continues to grow—recent developments include the aquarium at Union Station. The city features multi-use trails for walking or biking commutes to places like Soulard Farmers Market.

With so much to offer, the city attracts professionals and students, offering a variety of opportunities for academics, researchers and specialists in many fields, including medicine. St. Louis also attracts patients seeking exceptional care, and the Washington University Medical Campus is a destination for individuals dedicated to health and well-being in the region.

The medical campus is located in the city's Central West End, a neighborhood with a balance of living spaces, culinary diversity and entertainment sites that appeals to young professionals and families alike. The eclectic area includes historic buildings, local storefronts and eateries espousing some of St. Louis' famous cuisine.



SPORTS

Busch Stadium
Home of the St. Louis Cardinals
CITYPARK
Home of St. Louis City SC
The Dome at America's Center
Home of the XFL St. Louis Battlehawks
Enterprise Center
Home of the St. Louis Blues

CITYPARK Stadium, home of St. Louis City SC.

FAMILY FUN

City Museum
The Magic House
Purina Farms
St. Louis Aquarium at Union Station
Saint Louis Science Center
Saint Louis Zoo

The City Museum, a 600,000 square foot playground.

OUTDOOR LOCALES

Castlewood State Park
Creve Coeur Park
Forest Park
Laumeier Sculpture Park
Missouri Botanical Garden
The Muny

Forest Park, which sits on 1,300 acres.

CUISINE AND DINING

Anthonino's Taverna
Corner 17
Crown Candy Kitchen
Edera Italian Eatery
Sqwires
Ted Drewes Frozen Custard

Edera Italian Eatery, located in Central West End.

GROUP OUTINGS

The Armory STL
Bar-K
The Foundry
Pin-Up Bowl
The Fabulous Fox Theatre
Westport Social STL

The Fabulous Fox Theatre, located in Midtown St. Louis.

Chair's Office

John A. Olson Jr., MD, PhD
William K. Bixby Professor and Chairman

Maria B. Majella Doyle, MD, MBA
Executive Vice Chair
Professor of Surgery; Mid-America Transplant/ Department of Surgery Distinguished Endowed Chair in Abdominal Transplant

Sam B. Bhayani, MD, MS
Vice Chair of Clinical Operations
Robert K. Royce Distinguised Professor in Urologic Surgery; Chief Medical Officer, Washington University Physicians; Patient Care Quality and Safety Committee, Board of Directors, Barnes-Jewish Hospital

William E. Gillanders, MD
Vice Chair for Research
Mary Culver Professor of Surgery

Benjamin D. Kozower, MD, MPH
Vice Chair for Patient Safety and Quality Improvement
Professor of Surgery

Paul E. Wise, MD
Vice Chair of Surgical Education
Professor of Surgery

Tiffany M. Osborn, MD, MPH
Director, Leadership and Professional Development
Professor of Surgery

Mary C. Politi, PhD
Director, Faculty Career Development
Professor of Surgery

Institutional Leadership

Michael M. Awad, MD, PhD, MHPE
Director of Robotic Surgery, BJC Healthcare
Professor of Surgery

William C. Chapman, MD
Surgical Director, Barnes-Jewish Hospital Transplant Center
Eugene M. Bricker Professor of Surgery

Graham A. Colditz, MD, DrPH, MPH
Associate Director, Prevention and Control, Siteman Cancer Center
Niess-Gain Professor of Surgery; Chief, Division of Public Health Sciences

Maria B. Majella Doyle, MD, MBA
Director, Pediatric Transplant Program, St. Louis Children's Hospital
Professor of Surgery; Mid-America Transplant/ Department of Surgery Distinguished Endowed Chair in Abdominal Transplant

Bettina F. Drake, PhD, MPH
Associate Director, Community Outreach and Engagement, Siteman Cancer Center
Professor of Surgery

Timothy J. Eberlein, MD
Director, Alvin J. Siteman Cancer Center
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Bruce Lee Hall, MD, PhD, MBA
Vice President and Chief Medical Officer, BJC HealthCare
Professor of Surgery

Steven R. Hunt, MD
Surgical Director, Barnes-Jewish Center for Advanced Medicine - South County
Professor of Surgery

Aimee S. James, PhD, MPH
Co-Associate Director, Cancer Research Training and Education, Program Leader, Prevention and Control, Siteman Cancer Center
Professor of Surgery

Paul Kogan, MD
Vice Chief of Surgery, Memorial Hospital Belleville
Assistant Professor of Surgery

Colin A. Martin, MD
Pediatric Surgeon-in-Chief, St. Louis Children's Hospital
Brad and Barbara Warner Professor of Surgery

Matthew G. Mutch, MD
Chief of Surgery, Barnes-Jewish West County Hospital
Solon and Bettie Gershman Professor of Surgery; Chief, Section of Colon and Rectal Surgery

Kamlesh B. Patel, MD, MSc
Medical Director, Perioperative Services, St. Louis Children's Hospital
Professor of Surgery

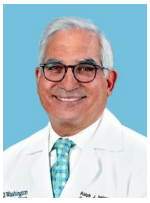
Jacqueline N. Saito, MD, MSCI
Medical Director, Clinical Excellence, BJC HealthCare
Associate Professor of Surgery

Jason R. Wellen, MD, MBA
Surgical Leader, Perioperative Services, Barnes-Jewish Hospital
Professor of Surgery

Department of Surgery Faculty

John A. Olson Jr., MD, PhD
William K. Bixby Professor and Chairman

DIVISION OF CARDIOTHORACIC SURGERY



Ralph J. Damiano Jr., MD
Chief, Division of Cardiothoracic Surgery
Evarts A. Graham Professor of Surgery / Co-Chair, Heart and Vascular Center

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Tsuyoshi Kaneko, MD
Chief, Section of Cardiac Surgery
John M. Shoenberg Chair in Cardiovascular Disease

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Mathieu Garand, PhD

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Chief, Division of General Surgery
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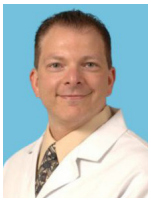
Section of Acute and Critical Care Surgery



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Omar M. Guerra, MD
Mark H. Hoofnagle, MD
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Jerry M. Liddell, DPM
Thoi H. Ngo, MD
Grace M. Niziolek, MD
Nishant Raj, MD
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Matthew McHale, MD
Michelle Medintz, MD
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Chief, Section of Colon and Rectal Surgery
Solon and Bettie Gershman Professor of Surgery

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Professors
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Radhika K. Smith, MD
Alyssa D. Wait, MD

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Chief, Section of Minimally Invasive Surgery
Pruett Family Professor of Surgery

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Ryan C. Fields, MD
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Julie A. Margenthaler, MD
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Chief, Section of Vascular Surgery
Gregorio A. Sicard Distinguished Professor in Vascular Surgery

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Chief, Division of Pediatric Surgery
Brad and Barbara Warner Professor of Surgery

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Baddr A. Shakhsheer, MD
Jesse D. Vrecenak, MD
Andrew Yeh, MD

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Sidney M., Jr. and Robert H. Shoenberg Chair in Plastic and Reconstructive Surgery

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Susan E. Mackinnon, MD
Justin M. Sacks, MD, MBA
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Trina G. Ebersole, MD
John M. Felder, MD
Amy F. Kells, MD, PhD
Xiaowei Li, PhD
Shoichiro Tanaka, MD, MPH
Amanda Westman, PhD

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Graham A. Colditz, MD, DrPH
Chief, Division of Public Health Sciences
Neiss-Gain Professor of Surgery

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Feng Gao, MD, PhD, MPH
Aimee S. James, PhD, MPH
Lisa M. Klesges, PhD, MS
Jingqin (Rosy) Luo, PhD
Yikyung Park, ScP
Mary C. Politi, PhD
Siobhan Sutcliffe, PhD, ScM, MHS
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Yan Yan, MD, PhD
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Saira Khan, PhD, MPH
Chongliang Luo, PhD
Sara M. Malone, PhD, ScM
Beryne Odeny, MD, PhD, MPH
Elizabeth A. Salerno, PhD, MPH
Michelle I. Silver, PhD, ScM

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Michael H. Johnson, MD
Interim Chief, Division of Urologic Surgery

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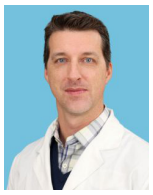
Sam B. Bhayani, MD, MS
Arnold D. Bullock, MD
R. Sherburne Figenshau, MD
H. Henry Lai, MD
Nupam Mahajan, PhD
Professors
Douglas E. Coplen, MD
Michael H. Johnson, MD
Associate Professors
Christopher T. Arett, MD, MBA
Eric H. Kim, MD
Gregory P. Murphy, MD
Erica J. Traxel, MD
Assistant Professors
Sunil M. Apte, MBBS, MS
Kefu Du, MD
Jason Farrow, MD
Jason K. Frankel, MD
Zeynep Gul, MD
Dane P. Johnson, MD
Charles P. Jones, MD
Paul Kogan, MD
Kiran Mahajan, PhD
Charles U. Nottingham, MD, MS
Arjun Sivaraman, MD, MBBS, MS, MCH
Woodson W. Smelser, MD
Zachary L. Smith, MD
Lewis J. Thomas IV, MD
Ralph J. Torrence, MD
Gino J. Vricella, MD
Instructors
Kimberly Berni, MD
Jeffrey Glaser, MD

New Faculty

DIVISION OF CARDIOTHORACIC SURGERY

Takashi Murashita, MD
Assistant Professor, Section of Cardiac Surgery

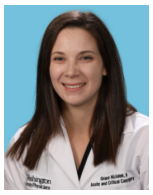
Whitney Brandt, MD
Assistant Professor, Section of Thoracic Surgery



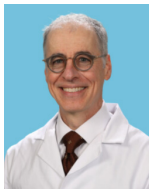
Mathieu Garand, PhD
Instructor, Section of Pediatric Cardiothoracic Surgery

DIVISION OF GENERAL SURGERY

Omar Guerra, MD
Assistant Professor, Section of Acute and Critical Care Surgery

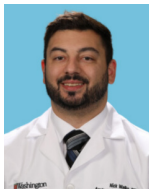


Grace Niziolek, MD
Assistant Professor, Section of Acute and Critical Care Surgery



Matthew Rosengart, MD, MPH
Professor, Section of Acute and Critical Care Surgery

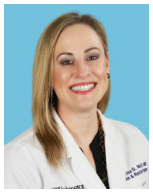
Craig Smith, MD
Assistant Professor, Section of Acute and Critical Care Surgery



Nicholas Welko, MD, MS
Instructor, Section of Acute and Critical Care Surgery

Jeffrey Zuke, MD
Assistant Professor, Section of Acute and Critical Care Surgery

Lawrence Mendelow, MD
Assistant Professor, Section of Colon and Rectal Surgery



Alyssa Wait, MD
Assistant Professor, Section of Colon and Rectal Surgery

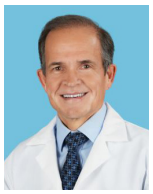
William Chapman Jr., MD, MPHS
Assistant Professor, Section of Colon and Rectal Surgery

Roheena Panni, MD, MPHS
Assistant Professor, Section of Surgical Oncology

Darren Cullinan, MD, MSCI
Assistant Professor, Section of Transplant Surgery

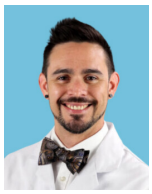
Gregory Martens, MD, PhD
Assistant Professor, Section of Transplant Surgery

Brent Allen, MD
Associate Professor, Section of Vascular Surgery

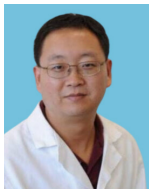


Todd Neuberger, MD
Instructor, Section of Vascular Surgery

DIVISION OF PEDIATRIC SURGERY



David Alvarado, PhD
Research Assistant Professor of Surgery



Jun Guo, PhD
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Colin Martin, MD
Chief, Division of Pediatric Surgery
Brad and Barbara Warner Endowed Professor of Surgery

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Saif Badran, MD, PhD
Assistant Professor of Surgery

Neha Datta, MD
Assistant Professor of Surgery

DIVISION OF PUBLIC HEALTH SCIENCES

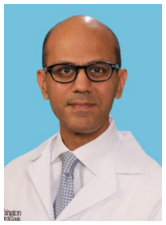
Beryne Odeny, MD, PhD, MPH
Assistant Professor

DIVISION OF UROLOGIC SURGERY

Charles Jones, MD
Assistant Professor of Surgery

Leadership Updates

Rebecca Aft, MD, PhD
Rebecca Aft, MD, PhD, a surgical oncologist and breast cancer specialist, was installed as the inaugural Jeffrey F. Moley Professor of Endocrine and Oncologic Surgery.



Sam Bhayani, MD
Sam Bhayani, MD, the Robert K. Royce Distinguisged Professor of Urology and chief medical officer of Washington University Physicians, was named vice chair of clinical operations in the Department of Surgery.

Maria B. Majella Doyle, MD, MBA
Maria B. Majella Doyle, MD, MBA, the Mid-America Transplant/Department of Surgery Distinguished Endowed Chair in Abdominal Transplantation, was named executive vice chair of the Department of Surgery.

Tsuyoshi Kaneko, MD
Tsuyoshi Kaneko, MD, was installed as the John M. Shoenberg Chair in Cardiovascular Disease. He also serves as chief of the Section of Cardiac Surgery within the Division of Cardiothoracic Surgery.

Colin Martin, MD
Colin Martin, MD, was named the new chief of the Division of Pediatric Surgery and pediatric surgeon-in-chief at St. Louis Children's Hospital.

John Olson Jr., MD, PhD
John Olson Jr., MD, PhD, was installed as the William K. Bixby Endowed Professor and chair of the Department of Surgery.

Paul Wise, MD
Paul Wise, MD, who has served as director of the general surgery residency program since 2014, was named vice chair for education in the Department of Surgery.

NEW PROFESSORS OF SURGERY

Douglas Coplen, MD
Urologic Surgery

J. Chris Eagon, MD
Minimally Invasive Surgery

Michael Johnson, MD
Urologic Surgery
Interim Chief of Urology

Yikyung Park, ScD
Public Health Sciences

Kamlesh Patel, MD
Plastic and Reconstructive Surgery

Nancy Bertelsman Retires After 35 Years of Service

Nancy Bertelsman is transitioning to a partial retirement after 35 years of service at Washington University School of Medicine in St. Louis. She has served as director of business operations in the Department of Surgery for 21 years. During that time she has overseen the flow of department finances, grants and purchasing. The impact of her work has resounded throughout every division and section of surgery. Her service has made it possible for Washington University surgeons to focus their attention on excellent, uninterrupted research, education and patient care.

The importance of Bertelsman's role cannot be overstated. As part of her expansive pool of responsibilities in the department, she handled budgets, quarterly financial reports, contracts with the hospitals, and worked in tandem with Mike Aug, senior director of finance and administration, and business director Emily Shepherd, to oversee the purchasing and grants administration groups, constantly updating performance as they negotiate contracts.

"Leading business operations for a large academic surgical department is challenging, but incredibly rewarding," Bertelsman says. "When you see things running smoothly, and a faculty member has access to the resources they need, you know you've had a part in making that happen."

Bertelsman is transitioning to a part-time role in the dean's office, where she worked during the university's recent Workday transition.

In her time at Washington University, Bertelsman has been witness to steady growth in faculty along with new techniques and sources of funding. She expresses a sense of pride in her role, while getting to see doctors' careers develop. "It has been so exciting getting to see new doctors arrive as junior faculty members, and to see them go on to receive highly competitive grants, such as the SPORE (Specialized Programs of Research Excellence) that was awarded to David DeNardo, Ryan Fields, and William Hawkins," she says.

While her expertise and knowledge will be missed, faculty and staff from across the department congratulate Nancy on a long and successful career and wish her the best in this next stage.

Innovative Perfusion Technology Advances Surgical Training

Michael Awad, MD, PhD, MHPE, left.

The Department of Surgery at Washington University is utilizing innovative machine perfusion technology to further enhance the training experience of future surgeons. A large part of surgical training takes place in the operating room, where residents observe and assist with cases, eventually performing operations under supervision as they develop autonomy. However, simulation plays an increasingly important role in surgical training.

Washington University is among the only centers in the country utilizing a novel system of cadaveric perfusion for advanced simulation training and research opportunities. Cadaveric perfusion uses perfusion technology to circulate a bloodlike, saline-based fluid through areas of a cadaver, simulating the effect of operating on a patient with healthy blood flow.

"This experience of training with perfused cadavers helps prepare young surgeons for situations when a patient comes to us with a traumatic injury or critical illness, and we must be ready to provide the care they need," says **John Olson Jr.**, MD, PhD, the William K. Bixby Professor and chair of the Department of Surgery. "When our residents finish their surgical training, they're able to provide the very best care to patients, thanks to the high level of operative and simulation experience they receive at Washington University."

Training with perfused cadavers takes place in the Washington University Institute for Surgical Education (WISE), a Level 1 Comprehensive American College of Surgeons Accredited Education Institute (ACS-AEI). WISE offers an ACS-AEI education fellowship, and has become an official training center for robotically-assisted surgery. Each year, WISE hosts over 1,400 events and serves over 4,500 learners from across the nation.

> **"It is no longer acceptable to do a procedure for the first time on a patient. That's where simulation comes in. In the operating room, the focus has to be on the patient. In the simulation center, education and training are at the forefront."**
>
> **Michael Awad, MD, PhD, MHPE**
> *Director of WISE*

Complex, dynamic types of care, such as treating shock and trauma, require a high level of fidelity. The simulated environment must account for blood loss and other critical problems not easily reproduced with rubber or plastic. Studies of cadaveric perfusion show that trainees report improved anatomical realism and a higher degree of readiness for actual clinical cases after training with perfuse tissue.

Although cadaveric perfusion has many benefits for surgical trainees, it is a costly process. Few institutions have the resources—financial and otherwise—to make this advanced training available to residents. Washington University is able to provide this valuable experience thanks to generous gifts from donors, including the Felman family, whose contribution funded cadaveric perfusion training at WISE. Donations to the Department of Surgery make it possible to continue training surgeons who will provide the highest level of care to patients for decades to come.

The Department of Surgery gratefully acknowledges the generosity of the following donors:

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Dr. Lawrence and Rupsa Yee
Mr. James R. Yust

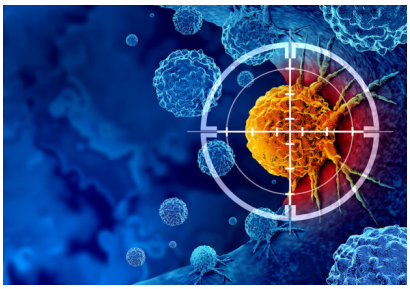
To Make a Gift

The Department of Surgery welcomes your support. Ways to make a gift include annual unrestricted giving such as membership in the Eliot Society, gifts for education of residents and fellows, support for research and endowment, and planned gifts and bequests. For additional information, please contact the Office of Medical Advancement at (314) 935-9691.

Journey to the Top: The Incredible Evolution of the Heart and Vascular Center

The John M. Shoenberg Chair in Cardiovascular Disease at the Foundation for Barnes-Jewish Hospital stems from a long tradition of community leadership and philanthropy by the Shoenberg family and the Shoenberg Foundation.

OTHER NEWS



Epigenome's Role in Cancer Revealed in New Study

Cancer Experience Sparks Mission to Educate

Hand Wound Nearly Costs One Patient his Limb (and his Life)

Siteman Cancer Center Launches Cancer Screening Initiative to Address Racial Disparities

To view other news, scan the QR code or visit surgery.wustl.edu/news/.

Top Docs

Congratulations to the following Department of Surgery faculty members cited as "tops" in their specialties in *St. Louis* magazine's 2023 "Top Doctors" issue.

Division of Cardiothoracic Surgery
Section of Cardiac Surgery
Ralph James Damiano Jr., MD
Tsuyoshi Kaneko, MD
Nabil A. Munfakh, MD
Amit Pawale, MD
Section of Thoracic Surgery
Benjamin Kozower, MD, MPH
Daniel Kreisel, MD, PhD
Bryan Meyers, MD, MPH
G. Alexander Patterson, MD
Section of Pediatric Cardiothoracic Surgery
Pirooz Eghtesady, MD, PhD
Dilip Nath, MD

Division of General Surgery
Section of Acute and Critical Care Surgery
Muhammad Yasin, MD
Section of Colon and Rectal Surgery
Steven R. Hunt, MD
Matthew G. Mutch, MD
Radhika Smith, MD
Paul E. Wise, MD
Section of Minimally Invasive Surgery
Michael Brunt, MD
Section of Surgical Oncology
William E. Gillanders, MD
William G. Hawkins, MD
Julie A. Margenthaler, MD
Section of Transplant Surgery
William C. Chapman, MD
Maria B. Majella Doyle, MD, MBA
Section of Vascular Surgery
J. Westley Ohman, MD
Brian G. Rubin, MD
Luis A. Sanchez, MD
Robert W. Thompson, MD

Division of Pediatric Surgery
Patrick A. Dillon, MD
Jacqueline M. Saito, MD, MSCI
Brad W. Warner, MD

Division of Plastic and Reconstructive Surgery
Keith E. Brandt, MD
Ida K. Fox, MD
Amy Kells, MD, PhD
Susan E. Mackinnon, MD
Terence M. Myckatyn, MD
Kamlesh Patel, MD
Justin Sacks, MD, MBA
Alison K. Snyder-Warwick, MD
Marissa M. Tenebaum, MD

Division of Urologic Surgery
Sam B. Bhayani, MD
Arnold D. Bullock, MD
Douglas E. Coplen, MD
Dane P. Johnson, MD
Erica Traxel, MD

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Bethany Sacks, MD, MEd, FACS, made her Major League debut! Dr. Sacks recently took the mound to throw out the honorary first pitch to Luken Baker #26 at a recent St. Louis @Cardinals baseball game. The opportunity came through a fundraiser at her children's school.

WashU Surgery
@WashUSurgery

Members of the Department of Surgery traded their white coats for helmets and hopped on bicycles to raise funds for cancer research at @SitemanCenter and Siteman Kids @STLChildrens through the @PedalTheCause annual cycling challenge.

WashU Surgery
@WashUSurgery

Ahead of the General Surgery Graduation celebrations, @WashUSurgRes chief residents presented three awards to faculty, fellows and staff for their commitment to the education & training of surgeons. Congratulations to Karen Schubert, BS, Amy Lee, MSN, and Whitney Brandt, MD!

WashU Surgery
@WashUSurgery

Majella Doyle, MD, was inducted as an Honorary Fellow of the Royal College of Surgeons in Ireland (@RCSI_Irl) at their conference in February. Doyle was recognized for her mentorship & incredible contributions to the field of transplant surgery.

Washington University in St. Louis
School of Medicine

Surgery

Department of Surgery

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To view the annual report online, scan the QR code or visit surgery.wustl.edu.

Partner Institutions

The 1,500 specialty and primary care clinicians who make up Washington University Physicians comprise the medical staffs at Barnes-Jewish Hospital and St. Louis Children's Hospital.

Barnes-Jewish Hospital
BJC HealthCare

St. Louis Children's Hospital
BJC HealthCare

Siteman Cancer Center
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