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In recent years, academic surgeons have faced a number of challenges as clinicians, researchers and educators. These range from declining reimbursements to tighter funding for research and new requirements in surgical education. Many of these challenges will not be resolved anytime soon—they will continue to shape academic surgery for years to come.

The Department of Surgery at Washington University School of Medicine continues to thrive in this climate because of the combined efforts of its faculty, trainees and staff. This report highlights their achievements in a number of important areas:

**Patient care:** Our clinical volume continues to grow. This is due, in part, to our business practices and to extending services to a growing number of satellite facilities. But our faculty also has maintained a strong commitment to our core mission of using knowledge to benefit patients. As a result, patients are offered the latest minimally invasive surgical techniques, new technologies such as endovascular procedures, and specialized care in areas such as cancer treatment, cardiac surgery, transplant surgery and peripheral nerve damage.

**Research:** We are able to offer leading-edge care because of our continuous breakthroughs in research. The Department demonstrates its leadership in this area by supporting both full-time basic science researchers and operating surgeons who spend a significant portion of their time in the lab. The result has been significant efforts to develop gene profiles of injury prevention, molecular markers and targeted therapies in cancer, new technologies in minimally invasive and vascular surgery, and fundamental insights into other areas of basic science and clinical research.

**Education:** Faculty members have responded to recent developments in surgical education by offering a skills course to senior medical students, giving general surgery residents greater input into their training and redefining the core curriculum of surgical training. In addition to teaching general surgery residents and medical students, the Department now offers 12 specialized residencies and fellowships. The result has been an educational program that spans all levels of training.

These accomplishments, and many others detailed in this report, demonstrate not only success in meeting current challenges, but also a foundation on which to build in coming years.

Timothy J. Eberlein, MD  
Bixby Professor of Surgery  
Chairman, Department of Surgery  
Director, Alvin J. Siteman Cancer Center
Academic medicine plays an essential role in healthcare. Through advancements in research, academic physicians have led the way for many improvements in clinical treatment.

Medical faculty members care for the sickest patients, who otherwise might not receive the specialized care they need, and they continue to advance medicine by training the next generation of academic physicians.

In recent years, these roles have not changed, but the business of academic medicine has undergone dramatic transformations. Academic physicians have continued to offer the same level of care, even as reimbursements have declined sharply. They face increased competition from community hospitals, which offer care to many patients closer to home. Residents and fellows continue to help with heavy caseloads but are restricted in work hours that may be even more limited in the future.

To date, the Department of Surgery has met all of these challenges as it continues to grow in the number of procedures (more than 56,000), visits (more than 76,000), clinical charges and receipts. Faculty members have played a critical role in the development of the Alvin J. Siteman Cancer Center, which in recent years has achieved NCI Comprehensive Cancer Center status and been recognized among the top tier of cancer research and treatment institutions. Both Siteman and the Department as a whole have met the demand for treatment in community hospital settings. This past year, the thoracic surgery section opened a satellite office at Barnes-Jewish West County Hospital (BJWCH). Other care in outlying communities includes:

- Satellite Siteman cancer facilities at BJWCH and Barnes-Jewish St. Peters Hospital (BJSPH)
- Colon-rectal, urologic, general and bariatric surgery at BJWCH
- Cardiac surgery at Christian Hospital and at hospitals in Branson, MO, and Mt. Vernon, IL
- Vascular surgery at BJSPH

With Ralph Damiano Jr., MD, as vice chairman for clinical services, the Department continues to look for opportunities to extend services to outlying areas. Urologic, colorectal and cardiothoracic surgery will offer treatment at Progress West Healthcare Center when the new hospital opens in O’Fallon, MO (about 30 miles west of St. Louis).

Using the Alvin J. Siteman Cancer Center as a model, the Department also is in the early stages of developing a world-class cardiovascular center for patients with heart problems. As this project develops, other opportunities for specialized centers may be considered.
Today, physicians in 10 specialties—including areas outside the Department of Surgery—continue to develop new procedures, test equipment and materials, and train residents, fellows and practicing surgeons in minimally invasive techniques. They also extensively use minimally invasive approaches in their clinical practices.

Current research at WUIMIS includes the testing of various synthetic and biological meshes and other materials for hernia repair in animal models. Hepatobiliary-pancreatic and gastrointestinal (HPB-GI) surgeon Brent Matthews, MD, who leads the studies, is reviewing mesh coatings to prevent adhesions or other complications in hernia repair, replacement of metallic fixation with a medical-grade glue and bioremodeled materials.

Matthews and gastroenterologist Steven Edmundowicz, MD, also are in the early stages of planning research on natural orifice transluminal endoscopic surgery. This technique—currently in concept stage but being discussed nationally—would use an endoscope placed into the mouth and then through the stomach to remove the appendix or gallbladder or to perform other procedures.

“This has the potential to be incisionless surgery,” says Matthews. “The current challenge with transluminal endoscopic surgery is that presumptive, novel and innovative procedures are far ahead of the actual technology to perform them.”

Divisions and sections that are part of WUIMIS have used progress in research to extend new procedures to patients as well as offering established minimally invasive procedures. Their clinical care places them among the national leaders in minimally invasive surgery.
Cardiac Surgery  Over the last five years, minimal access procedures for both mitral and aortic valve replacement have become routine at Barnes-Jewish Hospital. It is now possible, using specialized techniques, to perform valve repair and replacement through small four- to five-inch incisions. These can be done using small openings in the chest wall, often underneath the breast. This results in an almost invisible incision, especially in women. Since it is no longer necessary to split the entire breast bone, the patient experiences superior cosmetic results, less bleeding and a quicker recovery.

Colon and Rectal Surgery  Colorectal surgeons were part of an international team that determined that minimally invasive surgery is as safe and effective as standard open surgery for most patients with cancer confined to the colon. Section chief James Fleshman Jr., MD, estimates that 60 to 80 percent of colorectal surgeons’ clinical volume now involves laparoscopy. He predicts surgeons eventually will have an array of options for low rectal cancer and early rectal cancer that are minimally invasive or noninvasive.

HPB-GI Surgery  Matthews and surgeon L. Michael Brunt, MD, assume leadership responsibilities for WUIMIS as well as offering laparoscopic surgery for complex GI cases including paraesophageal hernias (see accompanying article), Heller myotomies for achalasia, adrenalectomy, splenectomy and complex abdominal wall hernia repairs. Re-operative surgical cases are among the most challenging.

HPB surgeons also have expanded laparoscopic surgery to include some pancreas and liver diseases.

Pediatric Surgery  Tamir Keshen, MD, director of minimally invasive surgery at St. Louis Children’s Hospital, has introduced approximately 25 new thoracoscopic and laparoscopic procedures to patients in Missouri including thoracoscopic lobectomy and diaphragmatic hernia repair. Planning is underway for a bariatric program in adolescents including laparoscopic obesity operations, as well.

Thoracic Surgery  Surgeon Bryan Meyers, MD, who specializes in esophageal conditions, uses minimally invasive surgery to treat paraesophageal hernias and achalasia. In patients with complex benign esophageal conditions who need re-operations, he often combines laparoscopic and open procedures.

In addition, all thoracic surgeons are now performing video-assisted thoracoscopic surgery (VATS) lobectomy. This procedure has emerged as an excellent alternative to thoracotomy for patients with early stage lung cancer.

Urologic Surgery  Washington University urologic surgeons performed the first laparoscopic nephrectomy and have been early adopters and pioneers of laparoscopic technology for many conditions. Last year, the urology service performed more than 550 laparoscopic cases including prostatectomies, nephrectomies, pyeloplasties and retroperitoneal node dissections. Currently, urologic surgeons are developing a three-dimensional laparoscopic camera and articulating laparoscopic instruments that will make even more patients candidates for minimally invasive procedures.

Divisions and sections that are part of WUIMIS have used progress in research to extend new procedures to patients as well as offering established minimally invasive procedures. Their clinical care places them among the national leaders in minimally invasive surgery.

(Above) Brent Matthews, MD, holds an omega 3 fatty acid absorbable barrier mesh being used for a laparoscopic ventral hernia repair. Washington University is participating in a clinical trial of the mesh. (Below) Initial fixation sutures are placed on the mesh.
When Jim McAliney developed severe problems with a paraesophageal hernia, he received a physician referral from a very knowledgeable source.

A woman who had been his daughter’s best friend in high school—Jennifer Spitler, MD, a general surgery resident at Washington University School of Medicine—recommended L. Michael Brunt, MD, a faculty member with extensive experience in laparoscopic gastrointestinal (GI) surgery.

McAliney had been taking medication to treat gastroesophageal reflux for about six years when his symptoms started to worsen. On a weekend getaway at the Lake of the Ozarks, he began to have severe chest pain. He suspected the pain was related to his reflux, and so he saw his internist when he returned home to St. Peters, MO. A subsequent X-ray revealed that half his stomach was above his diaphragm.

McAliney visited Brunt in late May 2006. “At that point, they had me scheduled for surgery on August 2,” he says. “Dr. Brunt looked at my X-rays and said, ‘I don’t think so.’ I had surgery within 10 days.”

Using a laparoscopic approach, Brunt moved McAliney’s stomach back into his abdominal cavity and closed the defect with a biological prosthetic mesh. He then performed a fundoplication, wrapping the stomach around the esophagus, to eliminate the reflux.

“The case was somewhat complex in that Mr. McAliney had a lot of stomach in his chest, and he had a large defect,” says Brunt. “We used a biological mesh, which acts as a scaffold for native cells to grow into and to reinforce that area. These are increasingly being used in paraesophageal hernia repair, but they are not yet standardized.

“Although surgeons don’t have extensive experience with the use of these meshes, it is believed they may reduce the risk of complications from synthetic meshes, which include scarring and erosion into the stomach or esophagus.”

McAliney says he wanted a surgeon “who does this procedure all the time” and is very happy with the outcome. His recovery was fast, with relatively little pain, and he was back at work as an information technology specialist for a funeral home within a week.

Best of all, he is without reflux for the first time in years. That means a better night’s sleep, more enjoyable meals and a more comfortable lifestyle.

It is believed biologic meshes may reduce the risk of complications in patients undergoing paraesophageal hernia repair.
Pioneers such as thoracic surgeon Evarts Graham, MD, and plastic surgeon Vilray Blair, MD, were among the eminent surgeons of their day, in part because of the advancements in surgical treatment that they conceived. Graham performed the first successful one-stage pneumonectomy for the treatment of lung cancer (1933), and Blair was the first to define the “delay” process in facial reconstruction (1921).

More recently, Washington University surgeons have introduced new procedures in several areas:

• James Cox, MD, developed the Cox-Maze procedure, a surgical approach widely accepted as the first cure for atrial fibrillation. (1987)
• Urologic surgeons performed the first laparoscopic nephrectomy. (1990)
• Transplant surgeons were the first to perform an adult-to-adult living donor liver transplant in the United States. (1996)

Currently, a number of clinical services are using new surgical techniques or performing procedures that few other centers are offering:

**Cardiac Surgery**
Cardiac surgery chief Ralph Damiano Jr., MD, and researchers have developed a minimally invasive Cox-Maze procedure to cure atrial fibrillation. A clinical trial showed that the procedure takes half the time of the traditional operation but is equally effective. The minimally invasive operation also produces less morbidity in patients.

**Plastic and Reconstructive Surgery**
Plastic and reconstructive surgery chief Susan Mackinnon, MD, performed the first nerve allotransplant in 1988 and is also a pioneer in using nerve transfers to restore function to limbs left paralyzed by traumatic injury. Because of problems with rejection, she performs only a few donor transplants per year in patients who have no other option. In contrast, she has performed nerve transfers on approximately 350 patients over the past decade. Her work with peripheral nerve surgery has received national attention in the media.

**Transplant Surgery**
Transplant surgery chief William Chapman, MD, is the principal investigator at the Alvin J. Siteman Cancer Center of a clinical trial using image-guided surgery to improve the ability of surgeons to remove liver tumors. Transplant surgeons also have had excellent results despite performing transplants in challenging cases. For example, they performed a liver transplant on a 10-day-old baby and used chemotherapy to down-stage a tumor in a patient with advanced hepatocellular carcinoma before performing a successful transplant.

**Vascular Surgery**
Since the introduction of endovascular treatment, the Vascular Surgery Section has gained national recognition in this area and is often approached to conduct clinical trials of new endoluminal devices. As a result, the Section continues to be active in clinical research on the leading edge of this technology: carotid stent graft devices, stents for peripheral vascular disease and fenestrated stents for patients with aneurysms who cannot undergo traditional endoluminal grafting. These clinical trials often provide patients with the opportunity to have serious vascular problems corrected using minimally invasive approaches.
Despite two congenital heart defects, Michael Habbe led a very normal life during his first two-and-a-half years.

All of that changed rapidly when his heart began to fail, and he needed the help of the Berlin Heart—an experimental ventricular assist device (VAD) available in only a handful of pediatric hospitals in the country.

Michael was born with congenitally corrected transposition of the great arteries—a defect in which both the main arteries and the ventricles are transposed—and a hole in the ventricular heart wall. A pacemaker was implanted to correct his congenital heart block.

In February 2006, colds and flu were circulating through the Habbe household in Rapid City, SD, and Michael came down with strep throat. He then developed swelling throughout his body.

“Michael was admitted to a hospital in Rapid City,” recalls Michael’s father, Thomas Habbe, MD. “His heart was failing, and he wasn’t getting any better. He wouldn’t eat anything or walk anywhere. This is a kid who was very active, so it was unusual for him to be so lethargic.”

Physicians in Rapid City determined that Michael was suffering from heart dysfunction—because his ventricles weren’t working—and pulmonary hypertension. After a consultation at a hospital in Omaha, NE, he was referred to St. Louis Children’s Hospital.

“When he came to us, Michael wasn’t a candidate for a heart transplant—only a heart and lung transplant—because of his pulmonary hypertension,” says cardiothoracic surgeon Sanjiv Gandhi, MD. “The five-year survival for a heart transplant is much better than for a heart-lung transplant. So we did what we could to relieve the pulmonary hypertension.”

Michael initially was treated with the pulmonary vasodilator drug Flolan, and an attempt was made to implant a new pacemaker. But Michael’s heart stopped during, and again after, the operation.

When Michael was placed on extracorporeal membrane oxygenation (ECMO), Gandhi began exploring the use of the Berlin Heart with Habbe and his wife, Marcy. The surgeon believed the VAD would not only serve as a bridge to transplant, but might relieve the pulmonary hypertension by unloading the systemic ventricle. In addition, the mobility of children on the Berlin Heart helps them rehabilitate before a transplant.

“When Michael was placed on the Berlin Heart, neat things began to happen,” says Habbe. “His pulmonary pressure improved quite a bit, he came off the ventilator, and toward the end of being on the device, he started walking.”

The heart transplant went well, and Michael is back to normal—very active and playing with his five brothers and sisters. He is the sixth patient to receive a Berlin Heart at SLCH and one of about three dozen to be placed on the VAD in North America as the FDA evaluates the device for general use.
Funding from the National Institutes of Health (NIH) and other sources has continued to grow; basic science researchers across a number of disciplines frequently help advance their fields, and the Department strongly supports clinicians who are also engaged in basic science research.

Under the leadership of surgery chairman Timothy Eberlein, MD, the Department’s research funding—which has tripled over the past nine years—increased again this year. In fiscal year 2006, researchers received more than $20 million in annual NIH, non-federal and corporate-supported grants. This level of funding was achieved despite a very competitive environment for researchers seeking federal funding and a tight federal budget.

During the same period, the Department continued to rank among the top academic departments of surgery in NIH support. In addition, researchers received $1,709,189 in clinical study income, almost twice the amount of nine years ago.

Basic Science Research

The Department of Surgery has a strong core of faculty members who work full-time in basic science research. Their range of research interests includes heart physiology, transplant immunology, processes underlying urologic conditions and the development of a test to detect breast cancer recurrence.

In many cases, operating surgeons also devote considerable time to basic science research. As examples, associate professor David Linehan, MD, is working to identify biomarkers for pancreatic cancer (see story on opposite page), and associate professor Craig Coopersmith, MD, is studying gut physiology and shock. Robert Thompson, MD, vice chairman for research, and Gregorio Sicard, MD, vascular surgery chief, each received NIH funding for a research project as part of a Specialized Center of Clinically Oriented Disease (SCCOR) grant to study metabolic syndrome and vascular disease.

“The strength of our department is our ability to bring along junior-level faculty members and help them get started in an environment where they can successfully do both surgery and research,” notes Thompson.

Clinical Studies

In addition to basic science research, faculty members are active in clinical trials.

At the Alvin J. Siteman Cancer Center, researchers received funding to perform a phase I clinical trial of a DNA breast cancer vaccine developed by scientists in the Department of Surgery. William Gillanders, MD, will lead a translational research group in evaluating the safety and immune response to the vaccine.

In colorectal surgery, assistant professor Matthew Mutch, MD, has completed early work in a study of gene-array technology to identify individuals with colon cancer who will need chemotherapy. This study has progressed to become a multi-center trial with Mutch as the lead investigator. Five centers across the country will use frozen and paraffin-fixed tissue to look for the gene profiles of cancer and predict whether patients will require chemotherapy.

Surgeons are conducting other clinical trials on new medications, medical devices and imaging technologies.
Linehan, an associate professor of hepatobiliary-pancreatic surgery, devotes about half of his practice to patients with pancreas cancer. He sees patients at Barnes-Jewish Hospital, one of the highest volume centers in the country for resection of the cancer. Typically—as at other centers—the survival rate is poor because the cancer is usually diagnosed at an advanced stage, having spread to nearby or distant organs.

“We put pancreas cancer patients through the Whipple procedure, which is a big operation,” says Linehan. “Typically, it’s three months before we can start patients on chemotherapy and radiation, which most need, because two-thirds of those patients are going to recur. A significant portion of patients develop recurrent disease before we can even start adjuvant therapy.”

Linehan believes the discovery of biomarkers for pancreas cancer in the patient’s blood could result in the development of a test for early detection, before patients have incurable, metastatic disease. Similarly, patients with pancreas cancer would benefit if a blood test before surgery could show metastatic disease not detectable with radiographic or diagnostic tests. The patient would then undergo chemotherapy first and have surgery if distant disease did not recur—thus improving the chances for recovery.

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David Linehan, MD, watches as lab resident Marcus Tan, MD, pipettes plasma samples for subsequent proteomic analysis.
Linehan’s empathy with patients and his collegial relationship with Reid Townsend, MD, PhD, director of the Proteomics Facility at the Alvin J. Siteman Cancer Center, opened the way for an innovative study that could lead to identifying biomarkers that help in management of the disease.

Linehan and Townsend, who worked together on an earlier project, developed an outline for a study using the emerging science of proteomics, which identifies human proteins that can serve as biomarkers of disease. As principal investigator of the study, Linehan also receives input from a collaborative group that includes protein chemist Jim Malone, PhD; research statistician Kim Trinkaus, PhD; research assistant professor Peter S. Goedegebuure, PhD; and lab resident Marcus Tan, MD.

As a first step, peripheral blood is drawn from pancreas cancer patients before surgery and at three and 12 months postoperatively. The proteomics lab then works to remove high-abundance proteins before placing the specimens on gels. Each gel contains pre- and post-operative specimens from the same patient, as well as a pool sample for comparison with other patients. Finally, the gels are scanned digitally and compared with other gels for “spots” that indicate common proteins.

Biostatistician Trinkaus plays a key role by analyzing hundreds of spots to create a “short list” of biomarker candidates. Once candidate proteins are extracted from gels, they are identified by mass spectrometry.

“In a practical sense, just as each person has a fingerprint on their finger, they have a characteristic ‘fingerprint’ of proteins that are in their plasma,” says Townsend. “Our proteomics studies show that plasma protein profiles from single individuals are much more similar than profiles from different individuals.”

Townsend says having longitudinal samples—in which each patient serves as his or her own control—is crucial to discovering protein biomarkers.

“If you see something disappear after surgery and it reappears later on, it’s a candidate for that individual. You then go forward with that feature and identify what protein it is. At the level of naming, you can now look and say ‘aha,’ this particular protein, even though it migrated differently, is actually the same protein in individual X and individual Y.”

To date, the project has identified a number of proteins that are differentially expressed in patients before the tumor is resected and after resection. “The next step is to identify proteins of interest and then validate them on specimens from a larger cohort of patients,” says Linehan. “I can’t tell you that we have a biomarker that’s been validated, but we certainly have a lot of candidates.”

“Patients will come into the clinic, and we’re going to be able to take a drop of blood and make the diagnosis of pancreas and other cancers. There is not going to be a need for these invasive biopsies if we can come up with reliable biomarkers.”

—David Linehan, MD
Trend Toward Translational Research

Robert Thompson, MD, vice chairman for research in the Department of Surgery, describes Linehan as the new breed of surgical investigator who combines clinical practice with translational research—bridging the gap between bench and bedside.

Linehan believes his surgical practice not only motivates him to look for a cure, but gives him unique access to the patient’s disease. For example, he has sampled blood immediately upstream and downstream from tumors during resection. Since biomarkers should be more prominent downstream from the tumor, the samples taken during tumor removal may help validate biomarkers found in the peripheral blood study.

Linehan also emphasizes the importance of the team and the resources provided by the Department of Surgery and Washington University School of Medicine. This includes researchers with expertise in protein chemistry and biostatistics, lab support and the latest technology in a rapidly evolving field.

For their part, Townsend, Trinkaus and Tan credit frequent meetings and discussion—as well as Linehan’s leadership—for the project’s success. They also share in Linehan’s passion for helping pancreas cancer patients.

“I agree with David that we really need to somehow, some way, contribute to better management of this horrible disease,” says Townsend. “His staff and my staff are really serious and pretty mad about this disease.”

Townsend says the next step will be for researchers to identify a panel of about 20 biomarkers which then could be tested in a group of a few hundred patients.

Ultimately, blood tests may represent the future of cancer diagnosis. “Patients will come into the clinic, and we’re going to be able to take a drop of blood and make the diagnosis of pancreas and other cancers,” says Linehan. “There is not going to be a need for these invasive biopsies if we can come up with reliable biomarkers.”

Pancreas Cancer Facts

In 2006, it is estimated there will be 33,730 new cases of pancreas cancer and 32,300 deaths from the disease. (American Cancer Society, Cancer Facts & Figures 2006).

Pancreas cancer is the fourth leading cause of cancer-related death in males and the fifth leading cause of cancer-related death in females. It is estimated that approximately $1.5 billion is spent in the United States each year on treatment of pancreas cancer (National Cancer Institute).
Although the Department has a long history of residency and fellowship training, surgical education is not static. It continues to change as new standards are adopted and to evolve as surgical specialties grow in complexity and innovation.

Surgery faculty members also continue to be active in teaching medical students as new efforts are made to prepare students who go on to surgical internships.

**Medical Student Training**

As a traditional part of their training, third-year medical students participate in a surgical clerkship with three rotations: one in general surgery and two in elective surgical subspecialties. On the general surgery rotation, students learn basic skin suturing techniques, participate in patient simulations with anesthesiology professors and learn how to manage surgical diseases.

“For students going on to other specialties, the class provides an idea of what patients experience when they undergo surgery,” says Valerie Halpin, MD, surgery clerkship director and assistant professor of surgery. “Another goal is to teach students how to communicate with surgeons.”

For senior medical students headed to surgical internships, L. Michael Brunt, MD, professor of surgery, has created an accelerated skills preparation class. This seven-week course offers hands-on instruction and practice of skills ranging from suturing and stapling to laparoscopic simulation.

Students take instruments home to practice and, at the end of the class, complete practical and written exams.

“With restrictions on resident work hours, there is just not the development needed to prepare senior medical students for surgical internships,” says Brunt. “This course—one of only a few offered by medical schools—gives them some of the skills needed to hit the ground running.”

**Resident Education**

Resident education has been a goal of the Department of Surgery since its inception nearly 100 years ago. Early in the 20th century, training programs were established in general surgery, urologic surgery, plastic surgery and thoracic surgery.

Today, the General Surgery Residency Program continues to play a predominant role in surgical education at Washington University School of Medicine. It is one of the most selective programs in the country and keeps pace with changes in technology and competency requirements as it allows residents input into their education.

The Department’s residency programs in surgical specialties match the General Surgery Residency in longevity and also in prominence and innovation.

The training of urologic surgeons began in 1910 under the direction of John Caulk, MD, a pioneer in the development of transurethral...
prostatic resection. Since then, the program in urology has steadily grown in size and reputation.

This academic year, approximately 175 of the 350 applicants for urology residencies in the United States applied for the three openings in the program. “Since our faculty includes the full spectrum of fellowship-trained urologic subspecialists, our program is desirable to all resident applicants,” notes Division Chief Gerald Andriole Jr., MD. “Our success in mentoring residents is evident by the large number who have garnered national awards and have gone on to academic positions.”

Plastic surgery training also dates back almost 100 years, with Vilray Blair, MD, recognized as a pioneer in American plastic surgery, training a number of young surgeons who went on to become leaders in the field. James Barrett Brown, MD, one of Blair’s pupils, and Paul Weeks, MD, who helped develop the model of the integrated plastic surgery residency, maintained the program’s innovation throughout much of the century.

Current Program Director Keith Brandt, MD, the William G. Hamm Professor of Surgery, seeks to extend this tradition of incorporating innovative procedures into the curriculum of plastic surgery residents and hand fellows. “Faculty members and residents continuously evaluate and update the program,” says Brandt.

In thoracic surgery, Evarts Graham, MD, the first surgery chairman and a nationally recognized thoracic surgeon, laid the groundwork for residency training. Over the years, the program has been expanded to include three residents who train in all areas of cardiothoracic surgery.

“Faculty members are known for their innovative approaches, and they take particular pride in offering this wealth of clinical experience to residents on the service,” says Program Director Marc Moon, MD.

Fellowship Training
General Surgery Residency
Program Director Mary Klingensmith, MD, notes that while the General Surgery Residency offers experience in all required areas, the trend is toward increasingly specialized training. “Nationwide, more and more residents choose to pursue fellowship training,” she says. “Most residents feel they need additional specialty training before they start a practice.”

Over two decades, the Department of Surgery was an early leader in creating new fellowship programs for surgical specialties. Fellowships were started in colorectal surgery (1980), vascular surgery (1986), transplant surgery (started in 1992 and re-established several years ago), surgical critical care (1995) and pediatric surgery (re-established in 1997 after being offered for several years in the 1970s). These programs are highly selective, nationally recognized training programs in their fields.

The trend toward specialization has only accelerated in recent years. Reflecting this development, the Department has added fellowships during this decade in minimally invasive surgery, breast disease and hepatobiliary-pancreatic (HPB) surgery.
The transition from medical school to residency—a difficult one for any doctor—is especially challenging for general surgery residents.

Not only do they have to learn the art of managing patients, but they also must quickly master the technical skills needed to be a surgeon.

“I think the transition from medical school to intern is tumultuous, whether you are beginning a surgical residency at Washington University or going into a psychiatric residency at a community hospital,” reflects Mary Klingensmith, MD, program director of the Washington University General Surgery Residency. “I think the transition itself is difficult, and it’s slightly more so here because this is a very busy clinical program and a lot is expected of a surgical intern.”

To help interns make the adjustment, they are paired with faculty mentors who bring a breadth of clinical and research experience to their roles as counselor, advocate and career advisor. Two administrative chief residents also draw upon their experiences to orient interns and help them adapt to their new environment.

From the beginning, residents also practice surgical skills outside the operating room. The program’s Surgical Skills Lab begins each July at “boot camp” with interns suturing pigs’ feet and learning proper technique. As residents progress, they go on to practice other manual skills, perform procedures on pig and cadaver models and train on endoscopic and laparoscopic simulators.
“The lab is a way to keep skills in a relaxed environment where learning is the focus, not getting things done,” Klingensmith says. “It’s much more directed toward the learner as opposed to the task.”

Clinical Focus
The residents’ clinical focus can be seen in their daily routine: All residents make early patient rounds. As the day progresses, junior residents divide their time between the OR and duties in the ICU and on patient floors, while more senior residents are in the OR almost all the time.

By the time residents graduate, they have a solid foundation and more cases than required in all American Board of Surgery content areas.

Complementing this clinical experience, residents play a key role in the Grand Rounds and General Surgery Conference held each Wednesday. During the conference—which is focused on didactic learning—residents give two 30-minute case presentations and explore the relevant literature surrounding each case. Faculty members moderate the presentations.

Residents also participate in a committee that sets the curriculum for all conferences and plan their own work and vacation schedules.

“Dr. (Timothy) Eberlein, the department chairman, likes to say this program trains the future leaders of American academic surgery,” says Klingensmith. “We try to teach residents leadership skills while they are here so they are prepared to assume leadership roles when they leave.”

Research Makes Program Unique
Although research is a traditional component of general surgery residency training, Klingensmith believes the extent of opportunities offered at Washington University makes the program unique.

Residents can pursue research opportunities within the Department of Surgery, which includes many faculty members with leadership positions in American academic surgery. They also can join basic science or other clinical science laboratories at Washington University or spend their research years with an investigator at another university or at the National Institutes of Health. Some even choose to pursue an MBA or MPH degree during the research years. Most residents spend two to three years doing research.

A survey of the program’s graduates from 1990 to 2005 lends strong support to the idea that early research training benefits the careers of surgeons. Thirty-five percent of respondents went on to receive independent faculty funding, and 20 percent obtained NIH grants after residency training. Surgeons in both academic and private practice indicated that “research was a worthwhile use of my time during residency.”

Time Out
Even with busy schedules, residents and faculty members take time out for enjoyable activities. These include a July picnic, a holiday party at the house of department chairman Timothy Eberlein, MD, a golf tournament and a chief residents’ dinner at the end of the year.

At the dinner, residents and faculty members celebrate individual accomplishments, and the chiefs are recognized before going on to fellowships and other junctures in their careers.

“We try to teach residents leadership skills while they are here so they are prepared to assume leadership roles when they leave.”

—Mary Klingensmith, MD, program director, General Surgery Residency

*The Department ranked second in National Institute of Health (NIH) funding to faculty members in 2004.

Extensive clinical trials and the use of minimally invasive procedures for a growing number of conditions distinguish the Division of General Surgery from general surgery programs nationally.

A Division within the Department of Surgery, we offer a broad range of care within our six sections: Acute and Critical Care Surgery, Colon and Rectal Surgery, Endocrine and Oncologic Surgery, Hepatobiliary-Pancreatic and Gastrointestinal Surgery, Transplant Surgery, and Vascular Surgery. Our 44 faculty members are dedicated to excellence in patient care, to advancing basic science and clinical research, and to training tomorrow's leaders in academic surgery.

In offering clinical trials, our surgeons take the lead in helping develop new medications and technologies. Trials of chemotherapy and other treatments underway at the Alvin J. Siteman Cancer Center have enrolled patients with breast, colon, liver, pancreas and thyroid cancer. New technologies and devices also are tested. These include carotid stent graft devices, laparoscopic techniques in colorectal surgery and image-guided liver surgery.

Several of our sections also are pioneers in expanding the use of laparoscopic surgeries as members of the Washington University Institute for Minimally Invasive Surgery (WUIMIS). Recent advancements include:

- The increased use of laparoscopic surgeries for benign and cancerous conditions of the liver, pancreas and stomach.
- Completion of a pilot study on laparoscopic treatment of rectal cancer and planning for a multicenter trial through the American College of Surgeons Oncology Group.
- Complex hernia operations including re-operations for incisional hernias.

In addition to their clinical research, many faculty members continue to be funded by government or other external sources for basic science research. Recently, vascular surgeons received grants to study metabolic syndrome and vascular disease as part of a larger Specialized Center of Clinically Oriented Research (SCCOR) grant. Other basic science research projects include investigations into gut physiology and shock, biomarkers in pancreatic cancer and the recurrence of hepatitis C in hepatitis C-positive transplant recipients.

As educators, our faculty's primary mission is to train general surgery residents, and so we only offer fellowships in areas with such a wide variety of experience that training cannot be completed within the General Surgery Residency. In the past two years, we have added two such fellowships – the Breast Disease Fellowship and the Hepatobiliary-Pancreatic Surgery Clinical Fellowship. As a result, all of our sections now offer fellowship training.

Gregorio A. Sicard, MD
Chief, Division of General Surgery
To better reflect its clinical role, the Section of Burn, Trauma and Surgical Critical Care was renamed the Section of Acute and Critical Care Surgery in July 2006.

The Section's new name highlights our surgeons' preparedness to deliver whatever care is needed, whenever it is needed to patients with all types of surgical emergencies and urgent situations. This includes trauma care, burn care, critical care and care of emergency surgical patients who come to the emergency room with conditions requiring the timely intervention of a qualified general surgeon.

Along with its name change, the Section announced several faculty appointments:

- Douglas Schuerer, MD, was appointed medical director of the Barnes-Jewish Hospital (BJH) Trauma Center, which recently was re-verified as a Level 1 Trauma Center by the American College of Surgeons and is the only nationally verified trauma center in Missouri. The center also was selected as one of five “highly prepared” hospitals in the nation by the National Foundation for Trauma Care (NFTC). The NFTC made its selection as part of a CDC grant to study the impact of a possible terrorist attack on individual trauma centers. Schuerer will lead the effort to return injured patients to their best level of function as quickly as possible.

- Craig Coopersmith, MD, was named co-medical director of the BJH Surgery/Burn/Trauma Intensive Care Unit. An international authority on patient safety in critical care surgery, he uses an intensivist-led, multiprofessional team model to achieve optimal outcomes after critical illness.

- New faculty member John Kirby, MD, will serve as medical director of the BJH Wound Center, a comprehensive program aimed at prevention and treatment of wounds.

As the Section develops new approaches to caring for its patients, our faculty remains on the leading edge of critical care research and education.

J. Perren Cobb, MD, whose research focus is genomics and critical illness, directs the new Center for Critical Illness and Health Engineering, a University-wide multidisciplinary research group seeking to improve patient outcomes in the ICU. Other faculty research addresses a broad range of issues including the ethics of genetic testing in the acute care environment, gut physiology and shock and identifying the fundamental laws of biology.

In education, the medical school named Robb Whinney, DO, director of the Standardized Patient Program, which seeks to improve the way faculty members teach and assess a student's competency in history taking, communication, physical examination and disease-specific criteria. At the most advanced level, the Section is helping address the impending shortage of critical care doctors through its Surgery Critical Care Fellowship.

Timothy G. Buchman, PhD, MD
Harry Edison Professor
Chief, Section of Acute and Critical Care Surgery
The volume of surgeries increased significantly last year for the Section of Colon and Rectal Surgery—continuing a consistent trend over the past six years.

A substantial part of that growth occurred at the Center for Colorectal and Pelvic Floor Disorders (COPE Center), based at Barnes-Jewish West County Hospital (BJWCH). Volume doubled in the anal physiology lab, and the hospital provided a dedicated radiologist to accommodate the increased need for defecography, MRI and ultrasound.

Colorectal services also extend to the St. Louis VA Medical Center and to Saint Louis ConnectCare, where the Section offers screening colonoscopies to the underserved population of St. Louis. This program is conducted with the help of grants awarded to Washington University faculty by the National Cancer Institute and U.S. Centers for Disease Control.

As part of an effort to expand minimally invasive techniques for colorectal cancer, Steven Hunt, MD, received training in trans-anal endoscopic microsurgery (TEM) techniques for the removal of rectal polyps and cancer. Hunt, who has performed the surgery in a limited number of patients, will be joined by Jennifer Lowney, MD, in offering the procedure.

Washington University colorectal surgeons also instituted a new screening technique to detect intraepithelial neoplasia, a sign of impending squamous cell carcinoma, in HIV-positive patients.

National leaders in colorectal research, the Section’s surgeons undertook several major research efforts in the past year:

• A pilot study on laparoscopic treatment of rectal cancer was completed and will be rolled out as a multicenter trial through the American College of Surgeons Oncology Group.
• Research continues on gene-array technology to identify patients with colon cancer who will benefit from chemotherapy.
• Genetic profiles of patients with Crohn’s disease, ulcerative colitis and diverticulitis are being studied to identify factors that predict recurrence and complications.

In education, the Washington University Colorectal Surgery Residency received approval for a third resident in the 2006-07 academic year. Elisa Birnbaum, MD, is the program director for the residency, considered one of the top training programs for colorectal surgeons in the country.

James W. Fleshman Jr., MD
Chief, Section of Colon and Rectal Surgery
Progress on research initiatives and the introduction of a breast disease fellowship were significant milestones for the Section of Endocrine and Oncologic Surgery over the past year.

Associate professor William Gillanders, MD, received funding to perform a phase I clinical trial of a mammaglobin-A DNA vaccine for breast cancer prevention and therapy. Mammaglobin-A was first identified by research associate professor Timothy Fleming, PhD, and is dramatically overexpressed in 80 percent of breast tumors. Then, a group of scientists led by Thalachallour Mohanakumar, PhD, the Maritz Professor of Surgery, developed a vaccine based on the mammaglobin-A DNA sequence. Vaccination with mammaglobin-A DNA is capable of generating a potent immune response to mammaglobin-A.

Other faculty members also made progress on research initiatives. Rebecca Aft, MD, PhD, received NIH funding for a study analyzing markers of chemotherapy-resistant cells in the bone marrow of women with locally advanced cancer. In addition, we opened a second clinical trial of a drug to treat thyroid cancer—for which, to date, surgery has been the only cure. We received funding from the Veterans Administration Merit Review for a project on fluorodeoxyglucose (FDG)-positron emission tomography (PET) imaging for indeterminate thyroid nodules and correlative studies.

The Section welcomed Julie Margenthaler, MD, who joined the faculty after becoming the first fellow to complete our breast disease fellowship. In addition to her clinical work as a breast surgeon, her research will focus on minimally invasive molecular techniques for staging of breast cancer.

Our surgeons continue to draw patients with Multiple Endocrine Neoplasia (MEN) syndromes from around the world. We follow a large number of patients with MEN syndromes, and last year, in collaboration with Duke University, we published the first long-term follow-up study demonstrating that prophylactic thyroidectomy in children with MEN-2A gene mutations can prevent medullary thyroid cancer.

At the Joanne Knight Breast Health Center, our breast surgeons, including Jill Dietz, MD, offer leading-edge treatment of benign and malignant breast disease. This includes ductoscopy in patients at high risk for developing breast cancer as well as a multidisciplinary team approach to the treatment of patients with breast cancer.

We continue to provide leadership and a high level of care at the Alvin J. Siteman Cancer Center, which this year joined the National Comprehensive Cancer Network, an alliance of 20 world-leading cancer centers dedicated to improving the quality of oncology practice. Two surgeons in our section also oversee the surgical cancer care delivered to veterans at the St. Louis VA Medical Center.
Established in the early 1990s, the Section of Hepatobiliary-Pancreatic and Gastrointestinal (HPB-GI) Surgery has become the largest Midwestern surgical referral center for disorders of the liver, pancreas, biliary tree and GI tract.

In the past year, our Section’s surgeons performed more than 100 Whipple surgeries—the major operation for pancreatic cancer—with low morbidity, low mortality and a short length of stay. And they continue to serve as a high-volume referral center for cancers of the liver and biliary tract.

As a growing part of their practice, hepatobiliary-pancreatic surgeons have increased the volume of laparoscopic surgeries for benign conditions of the liver, pancreas and stomach as well as for some cancers of these organs. In addition, they treat complex complications of surgery, such as biliary injuries from cholecystectomy—a reflection of their broad expertise.

The Section also is a leader in complex hernia repairs. GI surgeons L. Michael Brunt, MD, and Brent Matthews, MD, are at the forefront of advances in hernia repair, including the use of laparoscopic surgery to repair incisional hernias, treatment of elite athletes for sports hernias and use of newer synthetic and biologic meshes.

In bariatric surgery—another focal point of GI surgeons—our Section added the LAP-BAND® procedure to laparoscopic and open gastric bypass surgery as treatments for extreme obesity.

The research efforts of HPB-GI faculty members are closely related to their clinical areas. The work of David Linehan, MD, with pancreatic cancer patients led him to launch a major study of biomarkers that could lead to early detection and finding metastatic disease. Other investigations include clinical trials related to hernia and bariatric surgery, development of a pancreatic cancer vaccine and the use of the RAMPS (radical antegrade modular pancreato-splenectomy) procedure to achieve negative surgical margins (no cancer is left after excision of the tumor) for cancers in the body and tail of the pancreas.

We achieved one of our educational goals this year with the launch of an HPB Surgery Fellowship. The fellowship—which also includes a rotation on the abdominal transplant service—provides the specialized training needed for young surgeons to enter the HPB field. The new program is the second fellowship offered by the Section, which began offering a Minimally Invasive Surgery Fellowship several years ago.

The HPB Surgery Fellowship is one of only eight U.S. programs in its specialty.

Steven M. Strasberg, MD
Pruett Professor of Surgery
Chief, Section of Hepatobiliary-Pancreatic and Gastrointestinal Surgery

In the past year, our HPB-GI Section’s surgeons performed more than 100 Whipple surgeries—the major operation for pancreatic cancer—with low morbidity, low mortality and a short length of stay.
Surgeons in the Section of Transplant Surgery performed 88 liver transplants in 2005—making last year the busiest ever for the liver transplant program. The kidney transplant program also remained active with surgeons performing more than 150 transplants.

The number of transplants has continued to grow as the Section's surgeons utilize live donor kidney and liver transplants and split-liver transplants. With the ongoing shortage of donor organs, our transplant surgeons also have expanded the list of donor candidates to include donors with non-beating hearts, older donors, hepatitis B-positive donors (for hepatitis B-positive recipients) and hepatitis C-positive donors (for hepatitis C-positive recipients).*

While enlarging the donor base, the Section this year began offering liver transplants to patients with cholangiocarcinoma (bile duct cancer) when surgeons are unable to perform standard resection. Patients receive chemotherapy and radiation therapy to treat the cancer and are considered for transplantation if their disease is limited.

The Transplant Center at Barnes-Jewish Hospital is one of only a few U.S. centers to offer this option, which holds promise for a highly select group of patients.

Transplant surgeons also have worked with other specialists to set up a multidisciplinary imaging conference. This meeting allows liver and transplant surgeons, medical oncologists, hepatologists, interventional radiologists and tomographers to review imaging studies of patients who are discussed in tumor conference.

As patient volume increases, the transplant faculty continues to be very involved in research and teaching.

Immunology researcher Thalachallour Mohanakumar, PhD, received an NIH grant to investigate factors that influence the recurrence of hepatitis C in hepatitis C-positive transplant recipients. This is one of a significant number of NIH-funded basic research projects undertaken by the faculty. The section also has 10 to 15 active clinical trials—including a trial of acetate PET scanning—which holds promise for improved detection of hepatocellular cancer.

In education, our fellowship produced its first graduate since being re-established in 2004 and instituted a match for selection of fellows.

Fellows joined faculty members in learning from one of the world's transplant pioneers at last year's Anderson-Newton Lecture in Transplantation. Sir Roy Calne shared his experiences as the first surgeon to perform a combined liver-heart-lung transplant and many other ground-breaking transplants. The lectureship honors Charles B. Anderson, MD, and the late William T. Newton, MD, pioneers in transplantation at Washington University.

*Research has shown that hepatitis-positive livers are safe for hepatitis-positive transplant recipients when they are found to have minimal changes on liver biopsy and liver tests are normal.
The use of minimally invasive techniques for vascular problems is a fast-moving target with new technology constantly emerging. The Vascular Surgery Section has been a leading center involved in clinical trials of stent graft devices for various vascular diseases—devices at the heart of this new technology.

The Section was an early participant in clinical trials of stent graft devices to repair abdominal aortic aneurysms and continues to be active in trials of carotid stents. Soon, we will be participating in a phase II FDA trial of fenestrated stent graft devices for patients with aneurysms who otherwise could not undergo endoluminal grafting. In addition, the Section is active in trials comparing two types of stents for treatment of leg claudication.

In another area of expertise, Professor Robert Thompson, MD, has built a multidisciplinary center for patients with thoracic outlet syndrome (TOS)—a chronic, debilitating arm or neck condition that often baffles the patient’s physician. As part of his practice, he has successfully treated a number of professional baseball and basketball players with career-threatening TOS.

In basic science research, our faculty members have received federal grants to study metabolic syndrome and vascular disease as part of a larger Specialized Center of Clinically Oriented Research (SCCOR) grant. Assistant professor John Curci, MD, continues an active research program in the study of smoking and aneurysm formation. And assistant professor Eric Choi, MD, was named the 2006 Wylie Scholar in Academic Vascular Surgery for his research on vein and artery complications in patients undergoing blood dialysis because of kidney failure.

Fulfilling our educational mission, we train general surgery residents and offer one of the most competitive vascular surgery fellowships in the country. The vascular surgery rotation remains one of the most popular services for general surgery residents. In addition to our two vascular surgery fellows in 2006-2007, we have an international fellow, who performs a year of research and a year of vascular surgery. And a general surgery resident in his last post-graduate year will begin his first year of a vascular surgery fellowship under a new Early Specialization Project (ESP) program.

Complementing these educational programs, the Vascular Surgery Section continues to host 20 to 30 vascular surgery fellows at the end of their training from Latin America, Spain and other countries around the globe.

Gregorio A. Sicard, MD
Chief, Section of Vascular Surgery
The number of operative cases performed by pediatric surgeons increased by 10 percent from January to June 2006 in comparison to the first six months of 2005. The total number of operative cases for all surgical specialties at St. Louis Children's Hospital increased by four percent in the same time span.

In the ambulatory wound care center, an average of 120 to 150 children are treated each month—mostly for community-acquired soft tissue infections or abscess formation. Hospitalists provide all levels of sedation and anesthesia so that dressing changes can be performed on patients—from toddlers to adolescents—without pain or discomfort.

Minimally invasive surgery also helps to decrease pain and shorten the recovery time for children. Pediatric surgeons perform a wide range of laparoscopic procedures from appendectomy to bowel resection. During the past year, Tamir Keshen, MD, also has expanded thoracoscopic treatment of lung disease to include lobectomy for conditions such as pulmonary sequestration and congenital cystic adenomatoid malformation.

To bolster its strength in operative cases and surgical education, the Division welcomed Richard Bower, MD, who rejoined the faculty after a 16-year absence. Bower, who won teaching awards at Saint Louis University, will work closely with two pediatric surgery fellows but will also give close attention to the needs of general surgery residents and medical students.

In research, despite busy clinical schedules, Keshen and Patrick Dillon, MD, devoted studies to important clinical problems of pediatric patients. Keshen and fellow Stephanie Kapfer, MD, published an article in the Journal of Pediatric Surgery on coverage of omphaloceles (abdominal wall defects) using a biological dressing. Dillon conducted a study on the complications of portacatheters, which are used in children for long-term nutrition and administration of antibiotics and chemotherapy. A paper now in press will bring attention to the problems of the catheter breaking away from the port reservoir and port perforation.

The number of operative cases performed by pediatric surgeons increased by 10 percent from January to June 2006 in comparison to the first six months of 2005. The total number of operative cases for all surgical specialties at St. Louis Children's Hospital increased by four percent in the same time span.
One of the strengths of the Cardiothoracic Surgery Division—recognized as a leading heart and lung program in the United States—is the collaboration of the chiefs and surgeons among all of our three sections.

As each section breaks new ground in clinical treatment and investigations, we also work together on a number of projects including collaborating on cardiac and thoracic research and sharing knowledge and ideas.

All of our sections also make contributions to the Cardiothoracic Fellowship, which this year recruited its first “fast track” resident, who is training in cardiothoracic surgery while completing the final year of his general surgery residency.

G. Alexander Patterson, MD  
Evarts A. Graham Professor of Surgery  
Chief, Division of Cardiothoracic Surgery

Section of Cardiac Surgery  
Ralph J. Damiano Jr., MD  
John M. Shoenberg Professor of Surgery  
Chief of Cardiac Surgery  
Marc R. Moon, MD  
Michael K. Pasque, MD  
Nabil A. Munfakh, MD  
Professors of Surgery  
Traves D. Crabtree, MD  
Jennifer S. Lawton, MD  
Nader Moazami, MD  
Assistant Professors of Surgery

Section of Pediatric Cardiothoracic Surgery  
Charles B. Huddleston, MD  
Professor of Surgery  
Chief of Pediatric Cardiothoracic Surgery  
Sanjiv K. Gandhi, MD  
Associate Professor of Surgery

Critical Care Service in the Cardiothoracic Intensive Care Unit  
Michael S. Avidan, MBBCh, FCA  
Associate Professor of Anesthesiology & Surgery  
Department of Anesthesiology & Surgery  
Division Chief, Cardiothoracic Anesthesiology & Cardiothoracic Intensive Care  
Laureen L. Hill, MD  
Vice Chairman  
Department of Anesthesiology  
Associate Professor  
Department of Anesthesiology & Surgery  
Charl J. deWet, MBChB  
Associate Professor of Anesthesiology & Surgery  
Department of Anesthesiology & Surgery

Section of General Thoracic Surgery  
G. Alexander Patterson, MD  
Chief of General Thoracic Surgery  
Director of Lung Transplantation  
Bryan F. Meyers, MD  
Associate Professor of Surgery  
Richard J. Battafarano, MD, PhD  
Assistant Professor of Surgery

Section of General Thoracic Surgery  
Bryan F. Meyers, MD  
Associate Professor of Surgery  
Richard J. Battafarano, MD, PhD  
Assistant Professor of Surgery

General Thoracic Surgery

The General Thoracic Surgery Section operates one of the most comprehensive thoracic surgical services in the country. Annually ranked by U.S. News & World Report as a top program in respiratory care, the section offers:

- Lung transplantation, as one of the most active centers in the world
- Lung cancer treatment, including the use of Video Assisted Thoracoscopic Surgery (VATS) lobectomy as part of lung removal
- Lung volume reduction surgery for emphysema
- Treatment for benign and cancerous esophageal disease, including the use of laparoscopy for complex benign conditions
- Surgery for complications of histoplasmosis
- Treatment of obstructive airway tumors

Earlier this year, we opened a full-service satellite office at Barnes-Jewish West County Hospital. The new facility allows us to offer patients the same comprehensive care we provide at our main campus without requiring them to travel so far.

The Section also welcomed two new faculty members. Dan Kreisel, MD, PhD, brings support to the clinical program and has already received
major grants for his research on the immunological aspects of lung transplantation. Working in collaboration with Kreisel, Andrew Gelman, PhD, directs basic and clinical research studies in the Thoracic Transplantation Lab.

G. Alexander Patterson, MD

Cardiac Surgery

 Ranked among the nation’s top 10 cardiac programs by U.S. News & World Report in 2006, the Cardiac Surgery Section is a world leader in the treatment of heart disease. As the region’s busiest cardiac service, we see patients with a wide spectrum of cardiovascular disease. We have developed multi-disciplinary centers of excellence for the treatment of patients with:

- valvular heart disease
- hypertrophic cardiomyopathy
- heart failure
- disease of the thoracic aorta
- Marfan’s syndrome
- atrial fibrillation

Our volume of valve surgeries has increased by 55 percent since 2000, and we have the busiest heart transplant and mechanical assist device program in our region.

Recently, we were able to extend another option to patients with end-stage heart failure. With the use of an FDA-approved totally artificial heart, our surgeons now are able to bridge patients with the following conditions to transplant: intractable arrhythmias, severe failure of both the right and left side of the heart, and massive myocardial infarction (heart attack).

We have collaborated with our vascular surgery colleagues and offered state-of-the-art minimally invasive endovascular stenting for both thoracic aorta and arch aneurysms.

Our Section also continues to pioneer minimally invasive treatment of patients with atrial fibrillation. A recent study of more than 100 patients from our institution showed not only a decrease in morbidity among arrhythmia patients who undergo the minimally invasive Cox-Maze procedure, but also that results were statistically similar to those of patients who had the cut-and-sew operation.

Combining clinical care with research has been a hallmark of our group. Four of our five faculty members have extramural funding from either the National Institutes of Health or the American Heart Association, and the faculty published 54 manuscripts over the past year.

Ralph J. Damiano Jr., MD
John M. Schoenberg Professor of Surgery
Chief, Section of Cardiac Surgery

Pediatric Cardiothoracic Surgery

The Section of Pediatric Cardiothoracic Surgery is a leading program in:

- Lung transplantation, with St. Louis Children’s Hospital (SLCH) serving as the most active such pediatric center in the world
- Heart transplant
- Mechanical cardiac support as a bridge to transplant
- Congenital cardiac disorders
- Hybrid operations that include both surgical and cath lab procedures

In the past year, under associate professor Sanjiv Gandhi, MD, the Section has gained more experience with the Berlin Heart—an experimental ventricular assist device—as a bridge to transplant. Although not free of complications, this device can make it easier to maintain the health of a young child while he or she is waiting for a transplant.

Other recent developments include more prenatal consultations with cardiologists, as they become more adept at diagnosing congenital heart disease on prenatal ultrasound.

With our case volume increasing by about 12 percent over last year, we look forward to opening a new 12-bed cardiothoracic intensive care unit at SLCH this fall. All heart patients requiring intensive care and heart and lung transplant patients will stay in the unit, which will allow cardiothoracic surgeons greater oversight in shaping patient care.

Charles B. Huddleston, MD
Chief, Section of Pediatric Cardiothoracic Surgery
The Division of Plastic and Reconstructive Surgery carries on the tradition established by its early leaders—Vilray Blair, MD, and James Barrett Brown, MD—as its surgeons offer leading treatments in their specialties, conduct basic science research and train tomorrow’s leaders in plastic and hand surgery.

Over the past year, our clinical volume increased approximately 17 percent. Part of this growth can be seen in complex reconstructions performed for cancer patients, which increased dramatically with the National Cancer Institute (NCI) designation of the Alvin J. Siteman Cancer Center as a Comprehensive Cancer Center. We also are a national center for peripheral nerve surgery including peroneal nerve releases and operations for brachial plexus injuries, carpal tunnel syndrome, cubital tunnel syndrome and tarsal tunnel syndrome.

Two new faculty members focus on treatment at St. Louis Children’s Hospital (SLCH). Albert Woo, MD, specializes in pediatric craniofacial surgery. And Gregory Borschel, MD, who just completed a fellowship at the Hospital for Sick Children in Toronto, treats brachial plexus injuries and facial palsy at SLCH. These surgeons will help us accommodate a growing demand for pediatric plastic surgery services as the Division operates its Cleft Palate and Craniofacial Deformities Institute and provides other care at SLCH.

In the field of cosmetic surgery, four of our surgeons offer a full range of treatments at the Cosmetic Surgery Institute—with special emphasis on facial aesthetics—as well as body contouring and other areas of practice. The Institute is designed with patient comfort in mind, from its offices in the Center for Advanced Medicine to individual consultation and advanced operating facilities.

Along with their clinical practices, our faculty members are leaders in basic science and clinical research. Major areas of study include traumatic
nerve injuries, nerve grafts for repair after injury, peripheral nerve regeneration, pediatric craniofacial deformities and outcomes of various types of breast reconstructions. Terence Myckatyn, MD, received a grant from the American College of Surgeons to study the effects of glial cell-derived neurotrophic factor (GDNF) on nerve regeneration and a grant from the American Association of Plastic Surgeons to study preferential motor reinnervation. Thomas Tung, MD, was awarded a K08 grant for an investigation of composite tissue transplantation.

Our research efforts also were advanced by the purchase of a confocal microscope by the Barnes-Jewish Hospital Foundation. This equipment allows our faculty to view live imaging of nerve regeneration.

In education, our Plastic Surgery Residency and Hand Surgery Fellowship programs continue with full accreditation under the direction of Keith Brandt, MD, the William G. Hamm Professor of Plastic Surgery. These programs consistently draw many applicants—this year, about 200—to fill three positions. Faculty members continuously evaluate and update the program to cover innovative procedures and provide the most advanced training to residents and fellows. As a result, our graduates are prepared to be leaders in academic plastic and hand surgery as they advance in their careers.

As a highlight of the academic year, the Division presents the James Barrett Brown Resident Research Day in June. This year’s James Barrett Brown Professor was University of Southern California plastic surgeon Warren Garner, whose main professional interest is scar management after burns. Garner also is a graduate of the Plastic Surgery Residency Program at Washington University School of Medicine.

Our outstanding training programs are a tribute to both our dedicated faculty members and our residents and fellows, who are equally responsible for the continued success and development of the program. It is not surprising that graduates continue to support the program—by returning to share their professional knowledge and providing financial gifts—as they go on to other milestones in their careers.

Susan E. Mackinnon, MD
Sydney M. Shoenberg, Jr. and Robert H. Shoenberg Professor
Chief, Division of Plastic and Reconstructive Surgery
The Division of Urologic Surgery, ranked annually among the top 10 urology programs in the country, continues to be an early adopter of advanced technology and a leader in urologic research.

As an example, our Division has several investigations into new methods for the biopsy and treatment of prostate cancer:

- Our faculty is collaborating on a new imaging device that will allow urologic surgeons to pinpoint exactly where a biopsy specimen is taken. Currently, when cancer is suspected despite a negative biopsy, the surgeon must go back and randomly take more biopsy specimens.

- Cryoablation already is being used to focally destroy the cancer-containing region of the prostate as an alternative to irradiating or ablating the entire prostate. In addition, we are investigating other methods of focal ablation; one involves a vascular photodynamic treatment using a special laser after injection of a sensitizing agent.

- Another collaborative effort involves development of a needle with an infrared spectroscope that may be able to pinpoint regions that are cancerous.

In addition to the well-established urology program at Barnes-Jewish Hospital – which has seen an annual increase of 4.9 percent in prostate and kidney cancer cases over the past four years – the Division continues to experience growth at a number of other facilities.

Along with these investigations, our Division’s faculty members continue to lead national and international studies evaluating prostate cancer screening and prevention as well as NIH-funded basic research and studies on a wide range of urologic conditions (from pediatric urology to the genetics of urologic malignancies).

Innovations in Minimally Invasive Surgery

Urologic surgeons perform many operations that are minimally invasive. These include laparoscopic nerve-sparing radical prostatectomy, laparoscopic retroperitoneal lymphadenectomy and partial nephrectomy. Laparoscopic approaches to more advanced kidney cancers, as well as bladder cancer, reconstructive urology and adrenal abnormalities are also used.
Three-dimensional imaging facilitates complex laparoscopic surgery, and we now are helping develop a new line of articulating laparoscopic instruments such as needle holders, clamps and graspers. These devices allow the surgeon to simulate the human wrist, which facilitates complex reconstructions of the urinary tract. The Division performs about 800 laparoscopic cases annually, making this one of the largest centers worldwide for this type of surgery.

**Clinical Growth and Expansion**

In addition to the well-established urology program at Barnes-Jewish Hospital—which has seen an annual increase of 4.9 percent in prostate and kidney cancer cases over the past four years—the Division continues to experience growth at a number of other facilities.

Pediatric urologic surgeons at St. Louis Children’s Hospital, who perform many complex surgeries, have a rapidly growing case volume. In addition, the Division has offices at Barnes-Jewish West County Hospital and in Alton, IL, and at Christian Northeast Hospital in north St. Louis County. When BJC-affiliate Progress West Hospital opens in western St. Charles County, our surgeons will provide both pediatric and adult urologic services there.

**Leadership in Education**

Of about 270 new medical school graduates who apply to enter a urologic surgery residency, approximately two-thirds apply at Washington University, and 35 are interviewed. This demonstrates the popularity of our residency, which accepts three residents per year.

Along with the residency—which recently was specially recognized by the American Urologic Association (AUA) for its dedication to the organization’s mission – our faculty members and nurses give courses for doctors and nurses at all levels of practice. This includes international courses for surgeons in laparoscopic urologic surgery, CME courses for residents and community urologists, a nursing course in laparoscopic urology and a course for outpatient urologic nurses.

Division faculty members have consistently been invited to present courses on prostate cancer, female urology and reconstructive urology at national meetings, such as the AUA 2006 Annual Meeting in Atlanta, underscoring our national reputation as effective educators.

Gerald L. Andriole Jr., MD.
Chief, Division of Urologic Surgery
Clinical milestones

In January 2006, a baby from southern Illinois became the youngest patient to receive a liver transplant at St. Louis Children’s Hospital (SLCH). Jacob Gibbs was born with a rare metabolic disorder marked by the absence of a critical enzyme that helps rid the body of ammonia. Jeffrey Lowell, MD, chief of Abdominal Organ Transplantation at SLCH, performed the transplant when Jacob was 10 days old. The baby did well after the transplant and was the subject of local, national and international news coverage.

Professorships

Keith Brandt, MD, was named the William G. Hamm Professor of Plastic Surgery. The chair was established by a bequest from Hamm, an alumnus and noted plastic surgeon who died in 1998. Brandt is program director of the Plastic Surgery Residency and Hand Surgery Fellowship and also maintains a busy practice of breast reconstruction and of hand, head and neck reconstruction.

Appointments

Steven Brandes, MD, associate professor of surgery (Urologic Surgery), has been named the residency program director for the Division of Urologic Surgery. He also is on the Scientific Advisory Board of the National Kidney Foundation and the Board of Directors of the Society of Genito-urinary Reconstructive Surgeons.

J. Perren Cobb, MD, who was promoted to professor of surgery, is director of the new Center for Critical Illness and Health Engineering. The Center is a multidisciplinary effort to improve care for patients with critical illnesses. Cobb, a faculty member in the Section of Acute and Critical Care Surgery, also received an NIH grant on “Untangling Infection from Inflammation in Pneumonia.”

Sicard receives Lifetime Achievement Award

Gregorio A. Sicard, MD, chief of the Division of General Surgery and the Section of Vascular Surgery, and executive vice chairman of the Department of Surgery, received the 2006 Lifetime Achievement Award from the Barnes-Jewish Hospital Foundation.

The award was established by the Foundation in 2004 to recognize the extraordinary medical expertise of physicians who serve Barnes-Jewish Hospital. Sicard received the award on October 5.

Sicard has led the Section of Vascular Surgery since it was founded in 1983. Under his leadership, the service has grown from performing fewer than 30 procedures per year to performing more than 5,500 annually. In the last three years alone, vascular surgeons have seen an increase of 23 percent in volume. The service also has been a leader in the development of endovascular techniques to treat vascular disease.

A leading vascular researcher, Sicard recently received a federal grant to study metabolic syndrome and vascular disease.

Craig Coopersmith, MD, associate professor of surgery and of anesthesiology, was appointed co-director of the Surgical Intensive Care Unit at Barnes-Jewish Hospital (BJH). He also was named to the editorial boards of the journals Shock and Critical Care Medicine and received a supplemental grant to the R01 grant “Mechanisms of Intestinal Apoptosis in Sepsis and Shock,” for which he is principal investigator.

Valerie Halpin, MD, assistant professor of surgery (Hepatobiliary-Pancreatic and Gastrointestinal Surgery), was named surgery clerkship director for third-year medical students.

John Kirby, MD, assistant professor of surgery (Acute and Critical Care Surgery), was appointed medical director of the BJH Wound Center. The center is a physician-led, multi-disciplinary program dedicated to healing the acute and chronic wounds of inpatients, outpatients and extended care patients.

Douglas Schuerer, MD, assistant professor of surgery (Acute and Critical Care Surgery), was appointed medical director of the BJH Trauma Center, the only American College of Surgeons (ACS)-verified Level 1 Trauma Center in the state of Missouri.

Robb Whinney, DO, assistant professor of surgery (Acute and Critical Care Surgery), was appointed director of the Standardized Patient Program at Washington University School of Medicine. The program seeks to improve the way faculty members teach and assess a student’s competency in several key areas.

Awards

Eric Choi, MD, an assistant professor of surgery and radiology, was named the 2006 Wylie Scholar in Vascular Surgery by the Pacific Vascular Research Foundation (PVRF), a non-profit organization that supports medical-scientific research and public education about vascular disease. He is the PVRF’s 10th Wylie award recipient. His research involves the study of arteriovenous access complications in patients undergoing hemodialysis because of kidney failure.

Robert S. Figenshau, MD, associate professor of surgery (Urologic Surgery), received the Charles B. Manley Teaching Award for his work with urologic surgery residents. The award is named in honor of Manley, a long-time faculty member who inspired residents with his clinical acumen, kindness, compassion and love of teaching.

Adam Kibel, MD, associate professor of surgery (Urologic Surgery), received the Young Investigator Award from the Society of Urologic Oncology. The Young Investigator Award is presented annually to the physician/scientist who has made the most outstanding
Contributions to the field of urologic oncology within 10 years of having completed his or her urology residency.

Mary Klingensmith, MD, associate professor of surgery and program director of the General Surgery Residency, was a finalist for the Accreditation Council for Graduate Medical Education (ACGME) “Courage to Teach” award in 2006. The award recognizes residency program directors who find innovative ways to teach residents and to provide quality health care while facing the challenges of administering a residency.

Julie Margenthaler, MD, assistant professor of surgery (Endocrine and Oncologic Surgery), received the 2006 James Ewing Young Investigator Award for Clinical Research, which is presented by the James Ewing Foundation of the Society of Surgical Oncology. Her study, “Minimally Invasive Staging of the Axilla in Breast Cancer,” will seek to determine whether a combination of preoperative high-resolution axillary ultrasound, fine-needle aspiration biopsy and molecular analysis using real-time reverse transcription-polymerase chain reaction represents a viable, minimally invasive alternative to sentinel lymph node biopsy in the treatment of breast cancer.

Matthew Mutch, MD, assistant professor of surgery (Colon and Rectal Surgery), received the Career Development Award from the American Society of Colorectal Surgeons Research Foundation. This is a peer-reviewed award with two years of funding to surgeons who have made a commitment to academic surgery. The funding will support his project: “Molecular Basis for Prognosis for Stage 2 Colon Cancer Using Gene Array Technology.”

Terence Myckatyn, MD, assistant professor of surgery (Plastic and Reconstructive Surgery), received the C. James Carrico Faculty Research Award from the Academy of the College of Surgeons to study the effects of glial cell-derived neurotrophic factor on nerve regeneration and was awarded the prestigious John E. Hoopes Academic Scholar Award from the American Association of Plastic Surgeons to study preferential motor reinnervation.

Jeffrey Moley, MD, chief of the Section of Endocrine and Oncologic Surgery, received a Veteran’s Administration Merit Review Award for four years for contributions to the field of urologic oncology.
Academic and professional achievements

Rebecca Aft, MD, PhD, associate professor of surgery (Endocrine and Oncologic Surgery), received an NIH grant to study whether the chemotherapy resistance cells detectable in the bone marrow of women with locally advanced breast cancer express markers characteristic of stem cells. She also received a Barnes-Jewish Hospital Foundation grant to develop and validate a gene signature predictive of chemotherapy-resistant disseminated breast cancer cells.

Paul Austin, MD, assistant professor of surgery (Urologic Surgery), was awarded research grants to study medications for children with neuropathic bladder and for reducing the anxiety of pediatric patients undergoing voiding cystourethrography.

Sam Bhayani, MD, assistant professor of surgery (Urologic Surgery), served as a visiting lecturer at Henry Ford Hospital in Detroit, MI, in March 2006. He delivered a presentation on prostate cancer.

Elisa Birnbaum, MD, associate professor of surgery (Colon and Rectal Surgery), is chairperson of the CME Committee for the American Society of Colorectal Surgery.


Timothy Buchman, PhD, MD, chief of the Section of Acute Care and Critical Surgery, gave the Ravdin Lecture in the Basic Sciences at the American College of Surgeons in October 2005. In addition, he received renewal for a National Institute of General Medical Sciences (NIGMS) grant to train postdoctoral fellows in critical care research, one of only two programs in the country. He also received a subaward from the Defense Advanced Research Projects Agency (DARPA) for a project to uncover the fundamental laws of biology.

Douglas Coplen, MD, associate professor of surgery (Urologic Surgery), made a presentation at the 2005 Joint Meeting of the American Academy of Pediatrics and European Society of Pediatric Urology in Stockholm, Sweden, titled “Does the Magnitude of Fetal Renal Pelvic Dilation Identify Obstructive Postnatal Hydronephrosis?” Paul Austin, MD, was a co-author of the study.

Ralph J. Damiano Jr., MD, the John M. Shoenberg Professor of Surgery and chief of Cardiac Surgery, was elected as president of the Cardiac Surgery Biology Club and treasurer of the Society of Clinical Surgery. He also was elected to the Board of Directors of the International Society of Minimally Invasive Cardiothoracic Surgery.

J. Christopher Eagon, MD, assistant professor of surgery (Hepatobiliary-Pancreatic and Gastrointestinal Surgery), initiated a study on the “Effect of Bariatric Surgery on Functional Neuroimaging During Hunger and Satiation.”

James W. Fleshman Jr., MD, chief of the Section of Colon and Rectal Surgery, is secretary of the American Society of Colorectal Surgery (ASCRS) and chairman of the Maintenance of Certification Committee for the ASCRS.

Robert L. Grubb III, MD, assistant professor of surgery (Urologic Surgery), presented data from Washington University on the Prostate, Lung, Colorectal and Ovarian (PLCO) Cancer Screening Trial at the International Union Against Cancer Conference.
(UICC) World Cancer Congress international meeting in Washington, D.C., on July 8-12. He also received an American College of Surgeons Faculty Research Fellowship for 2006-2008 for a project entitled "Oncogenic tyrosine kinases impart treatment resistance to tumor cells by suppressing Bcl-x," The research will be conducted in the lab of assistant professor Steven Weintraub, PhD.

Bruce Hall, MD, PhD, MBA, associate professor of surgery (Endocrine and Oncologic Surgery), was the lead author in an article on evaluating surgeons based on total hospital costs, which appeared in the April 2006 issue of the Journal of the American College of Surgeons. The study was covered in Modern Healthcare and mentioned in the New York Times.

Charles Huddleston, MD, chief of the Pediatric Cardiothoracic Surgery Section, was appointed to the editorial board of the Journal of Thoracic and Cardiovascular Surgery.

Martin Jendrisak, MD, assistant professor of surgery (Transplant Surgery), is surgical director of the Renal Transplant Program at Barnes-Jewish Hospital and medical director of Mid-America Transplant Services (MTS). MTS coordinates the procurement of vital organs, tissues and eyes in hospitals throughout eastern and southern Missouri, southern Illinois and northeastern Arkansas.

Ira Kodner, MD, the Solon & Bettie Gershman Professor of Surgery, has become nationally known for his work as director of the Washington University Center for the Study of Ethics and Human Values. The Center promotes the ongoing examination of fundamental problems in ethics and values among practitioners, scholars, researchers and the general public. It is unique among American universities as its programs incorporate, in a truly interdisciplinary manner, all schools of the University and students at all levels.

Jennifer Lawton, MD, assistant professor of surgery (Cardiothoracic Surgery), was awarded a grant from the American Heart Association on “Myocyte Swelling and Postoperative Myocardial Stunning.”

Marc Moon, MD, professor of surgery (Cardiothoracic Surgery), was appointed to the National Heart, Lung, and Blood Institute (NIH) Special Emphasis Panel and to the Leadership Committee of the Council on Cardiovascular Surgery and Anesthesia (American Heart Association).

Surendra Shenoy, MD, associate professor of surgery (Transplant Surgery), who oversees the living donor transplant program, is involved in clinical trials of immunosuppression in liver and kidney transplant patients. He also serves as an advisor for Network 12 (the network overseeing end-stage renal disease [ESRD] care for the region comprising Missouri, Kansas, Nebraska and Iowa) for the Fistula First initiative, a program launched by the Centers for Medicare and Medicaid Services.

Ramakrishna Venkatesh, MD, assistant professor of surgery (Urologic Surgery), served as visiting professor at the hospitals of Louisiana State University and the University of Arkansas Medical Sciences in Shreveport, LA, and Little Rock, AR. He has presented his research work on ureteral physiology at international meetings and was awarded the “Best Paper” at last year’s World Congress of Endourology in Amsterdam.

Chimpanzee, tortoise benefit from wound management expertise of new surgeon

John Kirby, MD, joined the Section of Acute and Critical Care Surgery in mid-May of this year. An expert in wound management and problems, Kirby serves as director of the Barnes-Jewish Hospital Wound Center. Within weeks of his arrival, he had a very unusual consult – the St. Louis Zoo, internationally known for its facility and care, asked for his assistance with two ailing residents.

Kirby first used his knowledge of complex wound problem management to help a female chimpanzee with a non-healing wound. Typical of chimpanzees, the animal was picking at the wound and forcing straw into it. Kirby and a wound-care nurse performed a limited examination at the Zoo and got a closer look with the chimp under anesthesia. Kirby debrided the wound and then placed an antibiotic-based dressing on it. On follow-up, the chimpanzee was doing very well, and thus Kirby was asked for his medical advice on a turtle with an infection in its shell. He concurred with the veterinarians on applying a pressure wound dressing and using fiberglass to fill the defect.

“St. Louis has a right to be very proud of its zoo,” says Kirby. “We were happy to do anything we could to help out.”

Eberlein receives 2006 Sheen Award

Timothy Eberlein, MD, Bixby Professor and chairman of the Department of Surgery at Washington University School of Medicine, was awarded the 2006 Sheen Award by the American College of Surgeons.

Eberlein, who also serves as director of the Alvin J. Siteman Cancer Center, became chairman of the Department of Surgery in 1998 and director of the cancer center in 1999. He was named the Spencer T. and Ann W. Olin Distinguished Professor in 2000. Widely published, Eberlein is renowned for his clinical expertise in the management of breast cancer, gastrointestinal malignancies and soft-tissue sarcoma. In 2004, he was elected to the National Academy of Sciences’ Institute of Medicine, one of the highest honors medical scientists in the United States can receive.
An expression of gratitude

Joanne and Chuck Knight have generously supported the Alvin J. Siteman Cancer Center at Barnes-Jewish Hospital and Washington University School of Medicine with both their time and financial support. One contribution is especially meaningful for them.

The Knights have donated $5 million to endow and establish the Joanne Knight Breast Health Center and Breast Cancer Program. The funds will support clinical, research and outreach programs and bolster the work of faculty members in such areas as breast imaging, breast cancer vaccines and molecular detection of breast cancer in lymph nodes.

For Joanne, the donation is a way to express her gratitude for the care she received as a breast cancer patient six years ago. She was diagnosed in middle age—at exactly the same age as her mother—after a regular screening mammogram. The cancer was caught at an early stage and removed by Timothy Eberlein, MD, director of the Siteman Cancer Center and chairman of the Department of Surgery. Joanne also underwent radiation therapy directed by Carlos Perez, MD, then chair of radiation oncology at Washington University.

Joanne—who passed the five-year milestone cancer-free in May 2005—is grateful to Eberlein, Perez and her medical oncologist, Paula Fracasso, MD, PhD, for their outstanding care. Because she was treated and diagnosed while Siteman’s new outpatient facilities in the Center for Advanced Medicine were being built, she is especially aware of how the breast center has improved the treatment experiences of patients.

“I would go very, very early for my appointments because I had to travel from one end of the campus to the other to see everybody,” says Joanne. “Now it is nice to find everything in one building.”

The donation represents only part of what the Knights have done for Siteman. In 2004, Chuck Knight, chief executive officer of Emerson from 1973 to 2000 and chairman from 1974 to 2004, played a key role in securing a $10 million commitment from the Emerson Charitable Trust and the Anheuser-Busch Foundation for research expansion at Siteman. The commitment is being used as a challenge to generate $20 million in additional support.

And both Knights have given generously of their time to help Siteman, BJC HealthCare and Washington University. Joanne Knight is a charter member of the Siteman Cancer Center Community Advisory Board and a 20-year board member of the Central Institute of the Deaf. Chuck Knight was instrumental in forming the BJC HealthCare system, and he served as its board chairman from 1993 to...
1998. From 1991 to 1995, he was chairman of the Barnes Hospital board, and from 1996 to 1998, he served as a board member for the combined Barnes-Jewish Hospital. He is chairman emeritus for life of the Barnes-Jewish Hospital board. He also served as a Washington University trustee from 1977 to 1990.

The Knights hope others will join them in strongly supporting Siteman Cancer Center. “Our story is that we gave because we think it is such a great thing to have a world-class cancer center in our town, and our hope would be that more people would step up and support it,” says Joanne.

**Karls establish training fund**

Richard C. Karl, MD, an alumnus of the General Surgery Residency at Washington University School of Medicine, and his wife, Mary Catherine Karl, have established a training fund that will support travel to a surgical meeting for medical students interested in a career in general surgery or one of its subspecialties.

The Karls have made a $125,000 commitment to establish and support the training fund, which will be named in honor of Eugene M. Bricker, MD, an internationally renowned surgeon whose medical career at Washington University School of Medicine spanned more than 50 years. The fund will primarily support attendance at the annual American College of Surgeons' Congress, although other meetings, as deemed appropriate by the department chairman, may be covered as well.

“Dr. Bricker was the alpha dog during my years at Washington University—his formal yet approachable bearing, cogent thinking and vast surgical experience made him the centerpiece of the department,” says Karl. “The fund will help medical students grow in their understanding of surgery and its potential to improve the lives of patients—a fitting tribute to Dr. Bricker.”

Karl is the Richard G. Connar Professor and chairman of the Department of Surgery and director of the Division of Surgical Oncology at the University of South Florida. He served as founding medical director of the Moffitt Cancer Center at the University of South Florida from 1986 to 1991.

Karl also is the author of *Across the Red Line: Stories from the Surgical Life* (2002), a collection of essays that includes his experiences as a surgeon, patient and teacher and reflections on ethical issues and the capacity of the human body for healing. The book was praised by reviewers from *The Washington Post, JAMA (Journal of the American Medical Association), Journal of Vascular Surgery, St. Petersburg Times, Tampa Tribune* and other publications. An avid pilot, he serves as contributing editor at *FLYING* magazine, the world’s most widely read aviation magazine, where his monthly column, “Gear Up,” appears.

After earning his medical degree at Cornell University, Karl completed a general surgery internship and residency at Washington University School of Medicine and a fellowship at the University of Pennsylvania. He began his career in academic surgery at the University of Chicago.

In 2004, Karl returned to Washington University School of Medicine as the first to give the Eugene M. Bricker Visiting Lecture in Surgery. He spoke on the topic of esophageal cancer.
For more information about the Department of Surgery, contact:

Timothy J. Eberlein, MD  
Bixby Professor and Chairman  
Department of Surgery
Washington University  
School of Medicine
660 South Euclid Avenue  
Campus Box 8109  
St. Louis, MO 63110  
Phone: (314) 362-8020  
Fax (314) 454-1898

Jamie Sauerburger  
Executive Director, Business Affairs  
Phone: (314) 362-6770  
www.surgery.wustl.edu

Contact Us

Other Contact Information
Divisions and Sections
Division of Cardiothoracic Surgery  
(314) 362-6025
Section of Cardiac Surgery  
(314) 362-7327
Section of General Thoracic Surgery  
(314) 362-6025
Section of Pediatric Cardiothoracic Surgery  
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Section of Acute and Critical Care Surgery  
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