On the cover: Susan E. Mackinnon, MD, chief of the Division of Plastic and Reconstructive Surgery, and G. Alexander Patterson, MD, chief of the Division of Cardiothoracic Surgery and of the Section of General Thoracic Surgery, celebrated 35 years of marriage this year along with some notable achievements in their careers. Mackinnon, the Sydney M., Jr. and Robert H. Shoenberg Professor of Surgery, became the first woman president of the American Association of Plastic Surgeons at its 86th Annual Meeting in May 2007. Patterson, the Evarts A. Graham Professor of Surgery, was elected to serve as president of the American Association for Thoracic Surgery in 2009-2010.

Other faculty members featured on the cover are (from l-r) cardiac surgeon Jennifer Lawton, MD; Ming You, MD, PhD, cancer prevention researcher; urologic surgeon Robert Figenshau, MD; transplant surgeon Majella Doyle, MD; and transplant surgeon Jeffrey Lowell, MD.

Inside cover: Jeffrey Moley, MD, chief of the Section of Endocrine and Oncologic Surgery, performs surgery at the St. Louis VA Medical Center-John Cochran Division, where he serves as chief of Surgical Services.
AN ANNUAL REPORT TYPICALLY details the events and accomplishments of the past year, and this publication is no exception. Yet, when reading our overviews of clinical operations and research, you may note how many of our efforts are focused on the future.

Our surgeons continue to offer the most advanced care, which makes minimally invasive techniques — as well as innovative procedures — available for an increasing number of conditions. These include transanal endoscopic microsurgical (TEM) excision, video-assisted thoracic surgery (VATS) lobectomy and focal cryoablation for prostate cancer. As described on the clinical operations page, the surgeons who perform each of these procedures often see patients in sites away from our urban medical center.

Research, by its nature, is forward looking. New investigative efforts include the involvement of vascular surgery chief Gregorio Sicard, MD, and vice chairman for research Robert Thompson, MD, in a Specialized Center of Clinically Oriented Research (SCCOR) grant on metabolic syndrome and vascular disease. Our basic science researchers also continue to break ground in areas such as organ transplant rejection and cancer genetics.

A signal recruitment this year was the signing of Brad Warner, MD, to serve as surgeon-in-chief at St. Louis Children’s Hospital and chief of Pediatric Surgery. Brad is internationally known for his many academic accomplishments and for his leadership and mentoring skills. He will be actively expanding the program over the coming months. Another critical addition to our department and institution is Graham Colditz, MD, DrPH. As associate director for prevention and control in the Siteman Cancer Center, he will lead the Department’s efforts in outreach, epidemiology and outcomes research. He is an outstanding mentor and leader in the field.

In education, we continue to train tomorrow’s leaders of academic surgery through our 13 major residencies and fellowships. The challenges of our training programs — and the ability of our residents and fellows to meet those challenges — can be seen in this report’s profile of a General Surgery Residency intern during a typical day. Many of our faculty members also play key roles in the education of Washington University medical students, and they continue to distinguish themselves at all levels of training.

As we look forward to a new academic year, our focus remains on all components of our mission — patient care, research and teaching — and best preparing our department for the future.
JOHN KIRBY, MD, BECAME DIRECTOR of the Barnes-Jewish Hospital (BJH) Wound Center as hospital and wound care centers throughout the nation looked forward to steady growth in patient volume.

Nationally, at least two trends continue to predict this increase. Baby Boomers are growing older, and as they age, they are more susceptible to wounds. Also, the number of new diabetes cases continues to rise*, and with it, complications of age makes Baby Boomers susceptible to wounds.

John Kirby, MD, consults with Carol Turley, who was treated for infections in both lower legs resulting from radiation therapy.

General Surgery
Section of Acute and Critical Care Surgery

■ The Section continues to grow in its clinical volume. While the goal of other surgical specialties often is to conquer disease, acute and critical care surgeons step in — literally at a moment’s notice — and make every effort to rescue patients who are in trouble. These patients can be those from other medical centers who have overwhelmed the capacity of those institutions, local patients who are severely injured or patients from within Barnes-Jewish Hospital (BJH) whose medical conditions take a turn for the worse.

■ The acute and critical care service has continued to grow in its scope, to include pre-injury preparation and post-injury rehabilitation in its trauma activities. The service was an integral part of BJH’s recent recognition as one of the top 5 “Best-Prepared” hospitals in the country for disaster preparedness. Also, as critically injured patients begin healing, the Section is focusing on early recognition of discharge and disposition needs to more quickly return patients to their pre-injury life using a newly created outcome scoring system.

■ Craig Coopersmith, MD, performs basic science, translational and clinical research. His basic science work examines the role of the gut in sepsis. He has demonstrated that gut apoptosis (cell suicide) is elevated in critical illness. By preventing gut cell death using transgenic mice that selectively express anti-apoptotic proteins in intestinal
foot ulcers requiring treatment from wound specialists.

“We have a huge population within this medical center and an even larger population outside the medical center of patients with chronic wounds,” says Timothy Buchman, PhD, MD, chief of Acute and Critical Care Surgery. “That is part of growing old and frail and being in a hospital. John joined us to spearhead the effort of managing wound patients efficiently and to get timely and durable closure so patients can live the most fulfilling lives possible.”

Kirby formerly served as director of Wound Care and Hyperbaric Resources at the Advocate Illinois Masonic Medical Center in Chicago. During his first year at BJH, Kirby re-organized the wound center to accommodate a larger caseload and more complex cases, increased the use of tissue replacement and planned other enhancements such as performing more outpatient grafting procedures.

The center was renamed the Surgical Care Center at the West Pavilion to more accurately reflect its multidisciplinary specialty care. Patients there have a wide range of conditions including wounds from acute care surgery, diabetic/orthopedic foot wounds, burns, ostomy needs and lymphedema.

“Our surgeons treat seriously ill patients who come through the emergency room,” says Kirby. “Many of those patients have problematic wounds. So our surgeons end up treating these patients comprehensively.

“We also tackle very difficult wounds such as necrotizing fasciitis. We recently had three of these cases in one week, and all of those patients did very well.”

Along with providing patient care, specialists at the Surgical Care Center seek to advance wound care research and education at the national level. This spring, Kirby and other wound care specialists presented two posters and oral abstracts at the 20th Annual Symposium on Advanced Wound Care in Tampa, FL. The center also contributed a chapter on outpatient wound care to the 4th edition of Chronic Wound Care, published this year by HMP Communications.

*According to the Centers for Disease Control (CDC), the number of new cases of diagnosed diabetes increased by 54 percent from 1997 through 2004.
CLETUS “BUZ” WIDMER, AN 84-year-old florist in Highland, IL, is always looking for ways to grow and improve his business. A year ago, a Washington University colorectal surgeon provided an assist so Widmer could continue to enjoy his life’s work.

Widmer joined the family business — Widmer Floral Co. & Greenhouse — as an apprentice in 1937. Following in the footsteps of his father and uncle, he visited Europe 23 times to see how his New Treatment Available at Right Time

Fortunate

General Surgery Section of Colon and Rectal Surgery

- Washington University School of Medicine will be the lead institution for a multi-center, randomized controlled trial of laparoscopic approaches to rectal cancer, and Section Chief James Fleshman Jr., MD, will serve as principal investigator. The trial is supported by the American College of Surgeons Oncology Group (ACOSOG). It will examine whether the same outcomes can be achieved with laparoscopic techniques as with an open rectal cancer operation.

- Faculty members staff the Center for Colorectal and Pelvic Floor Disorders (COPE Center) at Barnes-Jewish West County Hospital five days a week, and the practice is thriving. In spring 2007, the Section set up offices at Progress West HealthCare Center in St. Charles County.

- The U.S. News & World Report edition of “America’s Best Hospitals” ranked Barnes-Jewish Hospital 18th in digestive disorders and 19th in cancer care in 2007. Washington University colorectal surgeons provide care in both these specialties.

- Matthew Mutch, MD, assistant professor of surgery, led the effort to develop a 32-gene array designed to identify patients with colon cancer who will benefit from chemotherapy. That array is now part of a

Cletus “Buz” Widmer has continued his life’s work as a florist.
counterparts conducted operations and adapted as the competition changed at home. Recently, he added a new display room to the front of his shop and expanded his offerings for proms and weddings.

Initially, his physician attempted to remove the polyp with a snare (a “noose” placed around the polyp). However, the surgeon could not resect the entire polyp. Widmer was told that he would need to have his rectum removed in order to resect the polyp completely — possibly even requiring a colostomy.

Although a biopsy showed it was benign, the remaining polyp still had to come out, because polyps of this size can harbor cancer that wasn’t sampled in the biopsy or, even if benign, have a high risk of developing into cancer. So a few days after leaving the hospital, Widmer returned to his doctor and asked: “What are we going to do now? We need to go further.”

After a referral to colorectal surgeon Steven Hunt, MD, Widmer learned he was a good candidate for transanal endoscopic microsurgical (TEM) excision. During this procedure, a 20 cm long proctoscope is placed through the anus, allowing the surgeon to visualize and resect the polyp without removing the rectum and without an abdominal incision.

“TEM is much less invasive and, in many cases, allows us to avoid taking out the entire rectum, which can cause a significant amount of morbidity,” says Hunt. “Most of our patients, after we do this, essentially have no pain. They can revert to their normal life in two or three days.”

According to Hunt, TEM is best used for benign polyps that can’t be removed any other way. However, for elderly or infirm patients, Hunt also uses it to remove cancer in combination with radiation.

“The procedure is not new, but originally the equipment was expensive and the technique untested,” says Hunt. “In the last three or four years, it’s really caught on.”

Hunt was trained in the technique in late 2005 and has since performed more than 40 cases.

For Widmer, TEM came along at just the right time. “I’m just fortunate it was available,” he says.
DONNA EVERT, THE MEMBERSHIP director for a local chamber of commerce, is accustomed to being active in her work, family and social life. Several years ago, she had to step back from that lifestyle until she and her doctors could bring a major illness under control.

Evert, now 63 years old, was diagnosed with stage 3 breast cancer after finding a small lump next to her chest wall. Although the cancer was confirmed at another medical center, Evert —

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Bedside manner. “Dr. Aft is gentle, but she doesn’t hide things,” says Evert. “She’s also very positive. Her attitude is to keep the person up.”

Aft says Evert — who received chemotherapy before surgery and underwent a lumpectomy instead of a mastectomy — responded very well to treatment. As with all of her patients, she considered whether Evert might benefit from clinical trials, not only her own (zometa) but those of other researchers.

Along with the zometa trial, Aft leads a number of other Siteman investigations. These include identifying genes that can predict early recurrent breast cancer through microarray analysis and a tissue collection trial of women with stage 2 and 3 breast cancer who have chemotherapy before surgery to validate these markers of metastases.

“The best aspect of being a surgeon and doing translational science is that I can take what I see in the clinic and bring it back to the bench, and then take what I learn at the bench and bring it back to the clinic,” says Aft.

Evert is glad this range of treatment is available close to home. “I can’t imagine going through this type of treatment without my family and friends,” she says.

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Rebecca Aft, MD, PhD

The American College of Surgeons (ACS) appointed Bruce Hall, MD, PhD, MBA, to serve on its Patient Safety and Quality Improvement Committee. Hall also serves on the ACS National Surgical Quality Improvement Program Advisory Committee and Statistical Modeling Subgroup, the Joint Commission Physician Engagement Advisory Committee and the National Quality Forum Individual Provider Performance Group. He gave presentations on thyroid cancer at the Society of Surgical Oncology 60th Annual Cancer Symposium and at the 2007 American Society of Endocrine Surgeons Annual Meeting.

The Longer Life Foundation awarded Julie Margenthaler, MD, a $50,000 grant for a research project on minimally invasive staging of the axilla in breast cancer. The project’s goal is to evaluate axillary ultrasound, fine-needle aspiration biopsy and reverse transcription polymerase chain reaction (a technique used in the diagnosis of genetic diseases) in staging axillary lymph nodes in patients with early stage breast cancer and clinically negative axillae.

Moley was named an associate editor for sarcoma by the Annals of Surgical Oncology.

Barnes-Jewish Hospital’s endocrinology program was ranked seventh in the nation by U.S. News & World Report in 2007.
LAPAROSCOPIC CHOLECYSTECTOMY (gall bladder removal) and splenectomy have become standard operations for Washington University general surgeons. Now the Section of Hepatobiliary-Pancreatic and Gastrointestinal (HPB-GI) Surgery is one of only a few centers in the country performing major liver resections laparoscopically — procedures that also may be common in five to 10 years.

“We started off with simpler cases of benign lesions,” says HPB-GI surgeon

David Linehan, MD, (right) performs a laparoscopic procedure.

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Although laparoscopic liver resection typically provides the well-known benefits of minimally invasive surgery — less postoperative pain, a shorter recovery and a smaller scar — it also may help some patients medically. The procedure may reduce the impact of a major operation on older patients and those with respiratory problems.

One of Linehan’s early patients was Phyllis Grider, an 82-year-old Illinois resident with respiratory insufficiency. Grider had a cancerous portion of her right lung removed seven years ago, and a CT scan in late spring 2007 revealed a spot on her liver, which turned out to be a primary liver tumor. She underwent a laparoscopic hepatectomy (removal of the right half of her liver) in June and was back to most of her daily activities a month later.

“I think I’ve done exceedingly well,” she says. “I do my own housework and my own cooking, and I’m just about back to all those normal activities.”

As the technology improves, I think the procedure will become more and more standard. At the same time, surgeons need to be careful they don’t increase the morbidity of operations in order to have smaller incisions.

David Linehan, MD

Minimally Invasive Surgery, a one-year clinical fellowship that began in 2003 and is part of the new MIS Section.

The Bariatric Surgery Program at Barnes-Jewish Hospital, directed by J. Christopher Eagon, MD, and Valerie Halpin, MD, was designated as an American Society for Bariatric Surgery Center of Excellence. This designation recognizes programs with histories of favorable outcomes in bariatric surgery.

A study by HPB-GI surgeons in the Journal of the American College of Surgeons showed that the radical antegrade modular pancreatectomy (RAMPS) procedure is highly effective in removing cancers of the body and tail of the pancreas. Another article by the Section’s surgeons demonstrated that a new stapling method led to fewer postoperative problems for patients undergoing pancreas surgery.

A clinical trial of adjuvant therapy in 54 patients with pancreatic cancer was completed over several years and showed improvement in survival when compared with standard therapy.

U.S. News & World Report ranked Barnes-Jewish Hospital 18th in digestive disorders and 19th in cancer for 2007. Washington University HPB-GI surgeons provide care in both these specialties.

Results

David Linehan, MD. “Now we’ve gained enough experience that we feel comfortable doing major liver resections and liver resections for cancer laparoscopically in appropriately selected patients.”

“We have performed several major resections — removing either the right half of left half of the liver. Initially, we had to convert a few laparoscopic procedures to open procedures, which is not unusual as you are learning a new procedure. The most important thing is the patient’s safety.”

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David Linehan, MD

Linehan says the typical incision for a major liver resection — underneath the ribs, on the right side, and extending up the abdomen — makes it difficult for patients to cough and deep-breathe postoperatively. The smaller incision of the laparoscopic technique helps reduce pulmonary complications, which is particularly beneficial to patients such as Grider.

According to Linehan, the instruments used to divide the liver laparoscopically have improved — leading to less blood loss and paving the way for minimally invasive techniques.

“As the technology improves, I think the procedure will become more and more standard,” he says. “At the same time, surgeons need to be careful they don’t increase the morbidity of operations in order to have smaller incisions.”
TWO-YEAR-OLD KAIDENCE OLIVER does not know it yet, but she represents a milestone in transplant history for Washington University School of Medicine.

Kaidence, who was born with type 4 glycogen storage disease, received a liver transplant at 10 months of age. When she returned to St. Louis Children’s Hospital (SLCH) for her one-year checkup, a celebration was held in her honor — she was the 1,000th patient to receive a liver transplant from Washington University transplant surgeons.

**General Surgery Section of Transplant Surgery**

- William Chapman, MD, chief of the Section of Transplant Surgery, has been named chief of the Division of General Surgery. He succeeds Gregorio Sicard, MD, who provided many years of successful leadership in the role. Sicard remains the Eugene M. Bricker Professor of Surgery, executive vice chairman of the Department of Surgery and chief of the Section of Vascular Surgery.
- In 2006, abdominal transplant surgeons performed the most liver transplants (114) and the most kidney transplants (160) in the history of the transplant programs.
- Kidney transplantation began at Barnes Hospital in 1963 and at St. Louis Children’s Hospital in 1964, while liver transplant programs at both hospitals were initiated in 1985.
- The liver transplant program is treating more patients who are sicker and have higher risks from transplant surgery than in the past. Surgeons have performed several liver transplants in patients in their mid-seventies who otherwise are in good health. The program also is open to patients with hepatocellular cancer or cholangiocarcinoma (bile duct cancer).
- Patients with cholangiocarcinoma receive standard staging imaging and laparoscopic examination to ensure there is no cancer outside of the bile ducts and liver. They receive courses in chemotherapy and chemoradiation to control their
Amber’s pregnancy with Kaidence, they contacted the hospital. Ross Shepherd, medical director of the Center, examined Kaidence at five weeks, and when she was ready for the transplant, surgeon Jeffrey Lowell, MD, performed the operation.

“Kaidence is doing great,” says Amber. “We didn’t know when her muscles would get stronger, but it actually happened quite fast. She started walking two months after we got out of the hospital, and right now, she acts like any normal two year old.”

Lowell says the operation would be considered unusual at many transplant centers for several reasons: Kaidence was young, very sick and received a reduced size liver transplant from another child.

“There are some things we are really noted for,” says Lowell. “A large percentage of our transplant patients are infants — less than one year of age. We also have among the largest experiences for hepatic malignancies, metabolic disease and cystic fibrosis.”

In the past 30 years, the quality of life has improved greatly for liver transplant recipients, who are transformed from being the most debilitated to those staging the most dramatic recovery of any solid-organ-transplant patients, says Chapman.
The American Heart Association estimates that more than 50 million Americans have metabolic syndrome, a condition that increases the risk of diabetes, heart and vascular disease. Yet the mechanisms of the syndrome as they relate to vascular disease are poorly understood. And it is not known whether treating metabolic syndrome could prevent vascular disease, or what those treatments might be.

Two Washington University vascular surgeons have joined with researchers in

General Surgery
Section of Vascular Surgery

In recent years, vascular surgeons have expanded endoluminal treatment to anatomical sites such as thoracic aortic aneurysms, carotid artery and peripheral arterial disease. The Section of Vascular Surgery participated in clinical trials of an endovascular graft device for thoracic aneurysms that was approved by the Food and Drug Administration (FDA) and is part of two ongoing clinical trials for similar devices. Vascular surgeon Patrick Geraghty, MD, is a principal co-investigator in clinical trials comparing two types of stents for lower extremity peripheral arterial disease. The Section also is participating in various trials of new devices in the vascular treatment of abdominal aortic aneurysms, treatment of medically resistant hypertension and carotid artery stent trials in high-risk patients.

Not all patients with abdominal aortic aneurysms are candidates for endoluminal grafting (primarily because of unsuitable anatomy). The Section will participate in a phase II FDA trial of fenestrated stent graft devices, which could extend minimally invasive treatment to a wider range of patients with the disease.
the Department of Medicine to answer some of these questions. Their NIH-funded team is studying a large group of vascular patients to determine the incidence and uncover mechanisms of metabolic syndrome, characterized as three or more of the following symptoms:

- Abdominal obesity
- Elevated triglycerides
- Reduced HDL cholesterol

Cardiac programs have been the emphasis for 20 years, and now these (SCCOR) programs devote resources to diseases of the aorta and peripheral arteries.

Robert Thompson, MD

- Elevated blood pressure
- Elevated fasting glucose

The research program—funded by a Specialized Center of Clinically Oriented Research (SCCOR) grant—also will begin investigating treatments.

“This SCCOR program evolved out of the interests of the National Heart, Lung and Blood Institute in developing large programs on vascular disease,” says Robert Thompson, MD, professor of surgery and the principal investigator (PI) of a vascular lab. “It is one of about seven nationwide devoted to vascular diseases. Cardiac programs have been the emphasis for 20 years, and now these programs devote resources to diseases of the aorta and peripheral arteries.”

Along with Thompson, Gregorio Sicard, MD, the Eugene M. Bricker Professor of Surgery and chief of the Section of Vascular Surgery, will play a key role in the study. He serves as PI of a core lab that will take blood and tissue samples of patients with all types of vascular disease. The samples will be used to conduct hypothesis-based research in three labs:

- Thompson will measure the incidence of metabolic syndrome in vascular patients, markers of inflammation and what happens to these markers after patients undergo endovascular aneurysm repair.
- Clay Semenkovich, MD, PI of the SCCOR grant and the Herbert S. Gasser Professor of Medicine and chief of the Division of Endocrinology, Metabolism and Lipid Research, will continue his work on the role of ataxia telangiectasia mutated (ATM) protein in vascular disease and the use of chloroquine, an anti-malaria drug, to decrease vascular disease in people with insulin-resistant diabetes.
- The lab of Dan Ory, MD, associate professor of medicine, will study the use of oxysterols—oxidized derivatives of cholesterol—to predict the development of vascular disease.

The Department of Medicine also has core labs that evaluate patients with MRI and ultrasound and recruit patients to undergo dietary interventions.

“We are all working together for a common goal, which is to decrease the burden of disease,” says Semenkovich.

In basic science research, Robert Thompson, MD, co-authored a report in Proceedings of the National Academy of Sciences U.S.A. identifying a key enzyme that triggers chronic inflammation in the aorta and promotes the growth of aneurysms. John Curci, MD, conducts research on aortic wall biology, and Eric Choi, MD, actively researches intimal hyperplasia, the response of a blood vessel to injury.

The Section welcomed Kathleen Raman, MD, as assistant professor after she completed a vascular surgery fellowship at Washington University.

In June 2007, Chris Chambers, MD, completed his first year of vascular surgical training under the Early Specialization Project (ESP) program. Chambers was the first to enter the program, which allows a general surgery resident in his last post-graduate year to begin training in vascular surgery. A second ESP program resident (Jack Oak, MD) has started his first year in the program.

Gregorio A. Sicard, MD
Eugene M. Bricker
Professor of Surgery
Chief, Section of Vascular Surgery
KEEPING UP WITH WORK AND family had become difficult for Susan Meyer, a first-grade teacher who was looking forward to her son’s upcoming wedding.

Meyer, 55, had lived with mitral valve stenosis for 15 years and was accustomed to not feeling 100 percent. But, as the wedding date approached, her symptoms worsened. “I was tired all the time,” she says. “My heartbeat had always

an artificial heart program is under development at BJH and Washington University School of Medicine. The surgical team is one of only nine in the country to implant the CardioWest™ temporary Total Artificial Heart as a bridge to transplantation in specific heart transplant candidates. In addition, the hospital recently completed a trial using the HeartMate II® Left Ventricular Assist System (LVAS) as a bridge to transplantation. Additional devices are being considered for inclusion, and another area of growth may be destination therapy, for which the device is permanent and the patient is discharged to his or her home.

Jennifer Lawton, MD, assistant professor of surgery, received the Nina Starr Braunwald Career Development Award from the Thoracic Surgery Foundation

Susan Meyer enjoys her classroom work once again.
been very irregular, but it was wearing me out more than usual.”

Meyer finally sought treatment in the emergency room when her symptoms became even more severe. Diagnostic tests determined she had atrial fibrillation (AF) — the most common type of irregular heart rhythm — and she was referred to Ralph Damiano Jr., MD, chief of Cardiac Surgery at Washington University School of Medicine and Barnes-Jewish Hospital (BJH).

Damiano performed a successful surgery, giving Susan a new mechanical mitral valve, repairing another valve and performing a Cox-Maze procedure to correct the AF. All the procedures were done at once through a minimally invasive incision under the breast and, thus, Meyer avoided the dramatic scarring and longer recovery of a cracked-sternum procedure.

Meyer also benefited from the long-term experience of Washington University cardiac surgeons in treating AF. James Cox, MD, pioneered the Cox-Maze procedure — considered the gold standard of surgical AF treatment — at BJH in 1987. Since then, BJH has seen patients from around the globe with AF, and its published success rates are the best worldwide.

The Cox-Maze procedure, when it was first developed, was a series of incisions that were placed around the left and right atrium to prevent the fibrillation from being able to sustain itself, explains Damiano. The operation is designed to block the conduction pathways needed to maintain AF.

In recent years, Damiano and his colleagues have modified the technically challenging “cut and sew” procedure using radiofrequency energy to heat heart tissue. Instead of making incisions, the surgical team creates lines of ablation, or scar tissue, on the heart muscle. The ablation lines redirect the abnormal electrical currents responsible for AF.

The new technique makes the procedure easier to perform, reduces OR time and improves patients’ recovery. “Our success rates in almost 200 patients are equal to those of the ‘cut and sew’ procedure,” says Damiano.

Since undergoing the modified Cox-Maze procedure and heart valve surgery, Meyer once again has energy for family and work. “I feel I have my life back,” she says.

Marc Moon, MD, professor of surgery, has developed one of the largest surgical practices for the treatment of thoracic aortic diseases in the Midwest. He has gained a national reputation for his expertise, particularly in the treatment of Marfan’s Syndrome with new valve-sparing procedures.

The Washington University heart program was ranked 10th in the nation by U.S. News & World Report in 2007.

Cardiac surgeons and cardiologists work closely together at the new BJH Center for the Treatment of Valvular Heart Disease. If surgery is needed, cardiac surgeons perform valve repair instead of replacement whenever possible.

Faculty members in the Division of Cardiothoracic Surgery co-authored 67 journal articles in 2006.

Life Back

Lucy T. Lawton, MD, PhD, associate professor of surgery, has been named the 2009 Woman of the Year Award winner by the Association for Women in Cardiovascular Medicine (AWCM). The biennial award of $100,000 supports the research career development of a female cardiac surgeon who holds a full-time faculty appointment with no more than 10 years having elapsed since completion of her thoracic surgery residency. Lawton will use the award to support her research on myocardial preservation and cell volume regulation.
WASHINGTON UNIVERSITY THORACIC surgeons offer a less invasive approach for removing lung cancer when the characteristics of the tumor allow. For patients like Tom Givens, this can mean a quicker recovery with less postoperative pain.

Givens, 75, of Vandalia, IL, discovered he had lung cancer after his oncologist, Phillip Dy, MD, performed a battery of scans during an office visit. An X-ray turned up a small spot on Givens’ lung, and a biopsy revealed cancer. Dy then referred Givens to Traves Crabtree, MD, a Washington University thoracic surgeon.

VATs Lobectomy Results in Quick Recovery

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Invasive Approach

Crabtree performed a video-assisted thoracic surgery (VATS) lobectomy at Barnes-Jewish Hospital, removing the cancerous portion of the lung with a minimally invasive approach.

VATS, or thoracoscopy, involves inserting an illuminated camera through a small incision made between the ribs and the use of video-endoscopic equipment that allows the surgeon to view the lung and perform the operation without a large incision. This approach contrasts with the standard thoracotomy procedure, during which the surgeon spreads the ribs, and occasionally must break a rib, to gain access to the lung tumor and tissue to be removed.

Givens’ hospital stay was uneventful, and he reports he was relatively pain-free. “I wasn’t in a lot of discomfort — nothing as severe as when I had a radical prostatectomy for prostate cancer,” he says.

Two weeks after the surgery, Crabtree gave Givens the OK to start mowing his lawn, and he was back to taking long walks. Although the cancer did not require radiation therapy or chemotherapy, Givens will be examined twice a year to check for possible recurrence.

According to Crabtree, Givens’ recovery is consistent with early data in the medical literature.

“There are data to suggest that VATS lobectomy may decrease postoperative pain and the length of stay,” he says. “It also has been suggested that for people who need treatment afterwards — for instance, chemotherapy — tolerance may be better after VATS lobectomy versus the standard lobectomy.”

Crabtree and Bryan Meyers, MD, first began offering the VATS lobectomy two years ago. It is now a standard procedure performed by all members of the thoracic surgery faculty when the tumor is small enough and in a favorable location.

“I generally tell people we’ve been doing the standard procedure for many years and that patients usually do very well with it,” says Crabtree. “The goal of both operations is to obtain the same result, in terms of both patient safety and being able to perform the same cancer operation.

Traves Crabtree, MD

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Non-immunologic and immunologic mechanisms leading to lung allograft injury are poorly understood, largely because of the lack of a physiological mouse model of lung transplantation. Research in lung transplantation thus far has relied on larger animal models that are limited by lack of reagents and only limited transgenic technology, or on non-physiological mouse models. The lab of Kreisel and Gelman has for the first time developed an orthotopic, vascularized model of single lung transplantation in the mouse, which represents a major milestone in lung transplantation research.

Martin Mayse, MD, who has a joint appointment in general thoracic surgery and pulmonary medicine, provides interventional pulmonology expertise for thoracic surgery patients who are seen at BJH and BJWCH.

Felix Fernandez, MD, the first “fast track” resident to enter the Cardiothoracic Surgery Fellowship, completed the final year of his general surgery residency during the 2006–07 academic year and will complete two more years as a fellow. Another general surgery resident, Spencer Melby, MD, has been accepted into the program for the 2008–09 academic year.

G. Alexander Patterson, MD
Evarts A. Graham
Professor of Surgery
Chief, Division of
Cardiothoracic Surgery
and Section of General
Thoracic Surgery

Traves Crabtree, MD, gave Tom Givens the OK to resume many daily activities during an office visit two weeks after the surgery.
THE FIRST THREE-AND-A-HALF years of Abby Hendricks’ life were filled with uncertainty. But thanks to the diligent work of the St. Louis Children’s Hospital (SLCH) lung transplant team, the outlook for Abby is far more secure now.

Abby was born with total anomalous pulmonary venous return, a rare congenital disorder in which the pulmonary veins from the lungs have
an abnormal connection to the heart. At one week of age, she had open heart surgery to correct the defect. However, by the time she was two months old, doctors found that her pulmonary veins were rapidly closing.

Abby, who lives with her mother Gail in Stuart, FL, was treated at a Miami hospital over the next several years. She had cardiac catheterizations and stents placed, and, at one point, Gail took her to Michigan for a consultation with another specialist.

“She lived a normal life,” says Gail. “Normal to the point she was attached to oxygen, but she ran and played with her friends.”

But Abby wasn’t getting any better, and her doctors offered little hope. Still seeking a solution, Gail contacted Charles Huddleston, MD, chief of pediatric cardiothoracic surgery at SLCH, after discussing Abby’s condition with a woman she met at a highway rest stop, who turned out to be a former nurse of Huddleston’s.

Gail brought Abby to SLCH for a consultation in December 2005, and Abby was admitted to await a lung transplant in July 2006 after a pulmonary hypertension crisis, during which she “coded” three times.

Abby responded quickly to the hospital staff’s care and thoroughly enjoyed the music/play therapy offered by the Child Life Services team. Although she was intubated and couldn’t speak, she captivated nurses and doctors by pushing buttons to assist in her medical care and communicating through sign language.

Finally, on October 23, donor lungs arrived, and Huddleston performed the transplant. “It was a complex operation because of all of her previous surgeries and having to create a new place to plug in the veins from the new lungs,” says Huddleston.

Although recovery was slow, Abby left the hospital on January 2, 2007, and is now full of energy and playing like a normal child, according to Gail. “Dr. Huddleston, Dr. (Stuart) Sweet (SLCH pulmonary transplant director) and the hospital team were truly amazing,” she says. “They built a bond with us—not only Abby, but me.”

Since 1990, the Section of Pediatric Cardiothoracic Surgery has performed more than 300 lung and heart-lung transplants, making it the most active pediatric lung transplant program in the world.

The pediatric heart transplant program has given new life to more than 250 patients, ranging in age from 3 days to 22 years, since it was established in 1986. It is one of the most active such programs in the United States.

In the past year, the case volume of pediatric cardiothoracic surgeries increased by about 10 percent over the previous year.

New developments in pediatric cardiothoracic surgery continue to shape the practices of the Section’s surgeons. In addition to the expanded use of ventricular assist devices in children waiting for heart transplants, trends include prenatal consultations with cardiologists and combined surgical and cath lab procedures.
THE PEDIATRIC SURGERY SPECIALTY grew from the recognition that children, and especially infants, have surgical problems distinct from those seen in adults. As the Washington University Division of Pediatric Surgery begins a new chapter in its history, some unique challenges of caring for infants and children are helping to shape the efforts of its surgeons.

When Brad W. Warner, MD, became chief of the Division on July 1, 2007, he brought with him a leading practice and

New Chief Addresses Distinct Challenges of Pediatric Patients

unique Pediatric Surgery Chief Brad Warner, MD, (left) and Patrick Dillon, MD, review a patient chart.

For a significant portion of the 2007 academic year, Patrick Dillon, MD, and Richard Bower, MD, maintained the surgical caseload for the Division and provided oversight and training for the Pediatric Surgery Fellowship.

- Senior fellow Michael Rollins, MD, accepted a faculty position at the University of Utah after completing his fellowship in 2007.
- Jennifer Seigel, RN, CPNP, a nurse practitioner, returned to oversee nursing at the ambulatory wound care center. The center treats a growing number of pediatric patients with methicillin-resistant Staphylococcus aureus (MRSA) in addition to burns and other complex wounds. A multidisciplinary team of pediatric surgeons, hospitalists (who provide anesthesia and sedation), infectious disease specialists and nurses works together to provide care for these patients.
- Dillon co-authored case studies on two patients in the medical literature. A case report on a bladder injury from a shard of glass appeared in the Journal of Trauma. Another article in Pediatric Radiology reported the successful treatment of a patient with ileal dysgenesis. Recognition of this lesion by pediatric radiologists is important so that surgical treatment, which is simple and effective, can be initiated quickly.
laboratory in the field of intestinal adaptation following massive small bowel resection. Warner developed his expertise at the University of Cincinnati, where he served on the faculty of the Department of Surgery for 16 years.

“An increasing number of children have short-gut syndrome, and the most common cause of that is necrotizing enterocolitis (NEC), which you see in many premature infants,” Warner says. “The cause of NEC is still elusive, but the frequency is increasing as more and more premature babies survive.”

Along with NEC, there are other conditions that result in short-gut syndrome including mid-gut volvulus, Crohn’s disease, trauma and gastroschisis. Warner plans to develop a major referral center at St. Louis Children’s Hospital for children with complex cases of short-gut syndrome that require surgical procedures to lengthen the intestine or to improve its function.

In the lab, Warner and his associates — Christopher Erwin, PhD, and Jun Guo, PhD — are exploring possible new treatments for short-gut syndrome.

“We’re looking into the molecular mechanisms that turn on the proliferation of cells in the bowel that’s left in place,” explains Warner. “And we’re evaluating various growth factors as a means to enhance mucosal growth in the bowel, which translates into children needing less intravenous nutrition and tolerating more nutrition orally.”

On patient floors and in the OR, Warner joins Patrick Dillon, MD, who performed yeoman’s service in providing surgical care and directing the Pediatric Surgery Fellowship during the 2006-07 academic year. Richard Bower, MD, also provided critical support in surgery and education. Marty Keller, MD, serves as director of trauma for the Division.

Both Warner and Dillon perform minimally invasive surgery in selected cases. Warner observes that children often recover from surgery more quickly than adults and, thus, the differences between laparoscopic and open surgery are minimal for many procedures. “We have a particular interest in bringing forward more advanced types of minimally invasive surgery that might afford a better outcome for children,” Warner says.

Noting the metropolitan area’s population growth in outlying areas, Warner — a graduate of Parkway North High School in St. Louis County — also plans to consider extending clinical services to suburban and exurban hospitals in the BJC HealthCare System.

In medical education, the Division offers an ACGME (Accreditation Council for Graduate Medical Education)-approved, two-year Pediatric Surgery Fellowship and a rotation for general surgery residents. Warner describes the fellowship, which trains a junior and senior fellow each year, as a “very central aspect of our mission.”

“To summarize our goals, we plan to expand and refine our clinical care, to be a leader in research that changes how we care for children, and to create the best possible educational environment for our fellows, residents and medical students,” Warner says.

Vision

Child magazine ranked St. Louis Children’s Hospital (SLCH) seventh on its 2007 list of the nation’s “10 Best” pediatric hospitals. SLCH is the only hospital in Missouri, Illinois and the surrounding eight-state region to achieve this elite ranking. The hospital was ranked in Child’s 10 Best survey for the third consecutive time.
SIX MONTHS AFTER SUFFERING A life-threatening head injury, 10-year-old Johnwesley Bryer was back to schoolwork, video games and joking with his twin brother, Ethan.

During Thanksgiving week 2006, Johnwesley was in the back seat of the family car, on his way home from school in Marshfield, MO, when a horrific accident occurred. A truck ran a stop sign and plowed into Johnwesley’s door, resulting in an open brain injury that destroyed his forehead, right eye socket and nose.

Albert Woo, MD, examines Johnwesley Bryer as (l-r) twin brother Ethan, mother Ronda and father Wiley look on.
An off-duty nurse from nearby Cox Hospital stabilized Johnwesley and ensured that a medical helicopter landed at the accident scene. A local neurosurgeon performed surgery that further stabilized the boy, and nine days later, he was transferred to St. Louis Children’s Hospital (SLCH).

At SLCH, pediatric neurosurgeon Matthew Smyth, MD, awaited the arrival of Johnwesley and asked pediatric plastic surgeon Albert Woo, MD, to join him in a craniofacial reconstructive procedure.

“John had a severe impact on the right side of his forehead,” says Woo. “The bone around his eye socket, on his nose and on his forehead was shattered. But more importantly, most of the bone that separated his brain and nose was missing, and his brain was actually bulging out through his nose.”

During a 12-hour operation, Smyth and Woo used bone harvested from the back of the skull, lifted the base of the frontal lobe out of the nasal area and created a new plate of bone as a skull base. They also used bone salvaged by the neurosurgeon at Cox Hospital to help recreate the forehead, and Woo performed an extensive orbital and nasal reconstruction.

“My concerns were to protect the brain, avoid spinal fluid leakage — which can cause lethal infection — and achieve a good cosmetic result,” says Smyth. “Albert did a great job of reconstructing his face.”

Johnwesley made steady progress neurologically, and, at an office visit six months after the surgery, Smyth gave him the “all clear” to resume all activities.

Ronda and Wiley Bryer, Johnwesley’s parents, are grateful to the life-saving treatment that all of their son’s caregivers provided close to home and away. “The doctors and nurses at Children’s Hospital have been wonderful,” adds Ronda.

Initially, both parents were just happy their son had survived and did not expect such a positive result from surgery. Perhaps Johnwesley’s mother best expresses the family’s emotional response to the recovery when she says, “Just look at him. He’s beautiful.”

Mackinnon has two NIH grants to study nerve allotransplantation for traumatic nerve injury and to investigate the effects of glial cell-derived neurotrophic factor (GDNF) on peripheral nerve regeneration. The laboratory of Thomas Tung, MD, is focused on limb and composite tissue transplantation. Myckatyn is spearheading a research project on GDNF to improve functional recovery after nerve injury.

Other research projects include evaluation of outcomes of various types of breast reconstructions; structural and functional imaging related to cleft lip and palate and craniofacial deformities; surgical outcomes in hand surgery; and effects of various neurotrophins, neuroenhancing agents and stem cells on peripheral nerve regeneration.

Pre-operative (left) and post-operative CT scans of Johnwesley’s skull.
WHEN CONDITIONS PERMIT, surgeons commonly eliminate cancer without removing the entire organ in breast, lung and kidney cancers. Now, four Washington University urologists are offering this approach to patients who have cancer confined to one area of the prostate. Sam Bhayani, MD, Robert S. Figenshau, MD, Gerald Andriole Jr., MD, and Adam Kibel, MD, use focal cryoablation to freeze tumors in men who have localized prostate cancer. The treatment is investigational, and a limited number of patients have undergone the procedure. But so far, the results are promising.

**Focal Treatment of Prostate Cancer**

**Division of Urologic Surgery**

- In recent years, Washington University urologic surgeons have maintained one of the nation's highest volume centers for laparoscopic urologic surgery. This year, these services were expanded further with the addition of robotic-assisted laparoscopic procedures in prostate, kidney and female incontinence surgery.
- Division Chief Gerald Andriole Jr., MD, and Robert Grubb III, MD, will be lead authors on a major paper following up on patients in the Prostate, Lung, Colorectal and Ovarian (PLCO) Cancer Trial after four years of prostate cancer screening. Begun in 1993, the PLCO has screened approximately 155,000 men and women from across the county, aged 55 to 74, for cancers covered in the trial.
- When the study is completed in about eight years, it should aid patients and doctors in making decisions about screening, diagnosis and treatment of prostate cancer. Andriole is chairman of the Prostate Committee of the PLCO.
- Washington University urologists at Barnes-Jewish Hospital were ranked 12th in the nation by *U.S. News & World Report* in 2007.
- The Division recently established a satellite office at Progress West HealthCare Center, located in O’Fallon, MO, about 30 miles west of St. Louis.

Sam Bhayani, MD, and Robert Figenshau, MD, use special software to plan placement of cryoneedles directly into the prostate to kill the prostate cancer.
Leading Role

“Why should we consider focal treatment in prostate cancer?” asks Bhayani. “Prostate cancer surgery can have an enormous impact on a patient’s quality of life. There are possible side effects such as incontinence and impotence. Although uncommon, they are possible.”

To determine the cancer’s scope, the urologists use transrectal biopsy and ultrasound, which maps the location of the cancer. Additionally, magnetic resonance (MR) scanning may be used to confirm that the cancer truly is localized.

During the outpatient surgery, one or two cryoneedles are inserted into the prostate to freeze the small cancerous part of the gland. Patients generally experience some discomfort after the procedure, but most are well enough to return to work the next day.

“We have much more control of the technology than we had a few years ago,” says Figenshau. “We can monitor and contour the ice formation to get a good freeze and control the iceball so it doesn’t go beyond where we want it to but also doesn’t leave viable prostate cancer behind.”

Bhayani and Figenshau estimate that as many as 20 percent of their patients have tiny prostate cancers that may be amenable to this procedure. This percentage may grow as detection techniques improve. The procedure can be performed in men of all ages, but treating the whole prostate is the current standard of care in younger men.

The urologists obtained Institutional Review Board approval to follow the outcomes of patients after surgery. If cancer recurs, a patient can be treated through another cryoablation or more traditional treatments.

Bhayani, who has performed several of these procedures, reports that early outcomes are excellent. Several studies in the medical literature also support the effectiveness of the technique.

“We are a national leader in developing niches for novel treatment of prostate cancer,” Bhayani says. “Targeted focal ablation is the ‘male lumpectomy’ and may be useful in a select group of prostate cancer patients.”

IN ADDITION TO USING FOCAL cryoablation, Andriole is investigating another targeted therapy for prostate cancer. He is leading a multi-institutional trial using a novel laser therapy, in conjunction with a laser-sensitizing agent, to achieve more accurate “sculpted” obliteration of the prostate cancer. After the FDA approves the study design, it will be launched at Washington University, Memorial Sloan-Kettering Cancer Center, the University of California-San Francisco and two other sites.

Adam Kibel, MD, leads a multi-institutional trial evaluating an imaging device that allows urologic surgeons to pinpoint the exact location in the prostate from which a biopsy specimen is taken. He also continues his study on the ability of single nucleotide polymorphisms to characterize prostate cancer.

The Division welcomes new faculty members M’Liss Hudson, MD, who rejoins the faculty to provide patient care at the VA Medical Center, and Henry Lai, MD, who specializes in neurourologic research and clinical care. Lai completed a fellowship in neurourology, female urology and voiding dysfunction at Baylor College of Medicine in June 2007.

Andriole and Peter Humphrey, MD, PhD, professor of pathology and immunology, continue their collaboration on the development of a needle with an infrared spectroscope that may be able to pinpoint cancerous regions in the prostate.
The Life of an Intern

Entering the World of Surgery

ERIC JENKINS, MD, KNEW THAT his general surgery residency would be very challenging. Just how challenging, he would discover during his first week as an intern.

“The first week was a shock — the whole pace of everything was so fast,” says Jenkins. “There were a lot more patients on the service than at my medical school. And I had to learn a whole system, including patient charting and orders, as well as where everything was.”

A summary of Jenkins’ activities may not seem daunting at first glance. On a typical day, they included:

• Participating in an early morning conference with other residents.
• Attending to pre-op duties in the OR
• Scrubbing and assisting with surgical procedures.
• Making patient rounds throughout the day.
• Breaking for meals with fellow residents.
• Attending afternoon clinics.
• Signing out patients at the end of the day to fellow interns.

But packed within each day are many hidden responsibilities. “Even though the work schedule was reduced to 80 hours a week, it’s pretty much all ‘go time,’ ” says Jenkins. “Your pager is going off constantly with nurses needing to know: ‘What drug can I give this patient?’ ‘What’s the dose?’ ‘The patient has a fever now — what should I do?’”

“We also spend time in clinic each week seeing patients preoperatively and postoperatively with the attendings.”

In selecting a residency, Jenkins looked for a program with excellent clinical and research opportunities, but also needed to balance work and family life. During his first year, he was able to carve out significant quality time — such as picnicking in Forest Park and attending a Cardinals baseball game — with his wife Rachel and sons Blake, 5, and Isaac, 2.

Although he has had the typical “ups and downs” of an intern, Jenkins is...
very happy with his choice. “I love being in the OR, and I definitely have felt I made a difference in the lives of some of my patients,” he says.

Editor’s note: Eric Jenkins served as an intern during the 2006-07 academic year and is currently a PGY-2 general surgery resident.

T. Elizabeth Robertson, MD, a surgical resident working under Timothy Buchman, PhD, MD, is leading a national effort to determine how to implement best practices at bedside in the ICU. The goal is to ensure each patient receives the right suite of interventions at the right time as recommended by national professional societies.

The Division of Plastic and Reconstructive Surgery began a Peripheral Nerve Fellowship on July 1, 2007. The first fellow, Justin Brown, MD, completed a neurosurgery residency at Baylor College of Medicine before joining Washington University.

The Division of Urologic Surgery has added a fellowship in urologic oncology (with one fellow). This is in addition to the Urologic Surgery Residency and a fellowship in minimally invasive urology (with two fellows).

**Residency and Fellowship Programs**
- Breast Disease Fellowship
- Cardiothoracic Surgery Fellowship
- Colon and Rectal Surgery Fellowship
- General Surgery Residency
- Hand Surgery Fellowship
- Hepatobiliary-Pancreatic Surgery Fellowship
- Minimally Invasive Surgery Fellowship
- Pediatric Surgery Fellowship
- Plastic Surgery Residency
- Surgical Critical Care Fellowship
- Transplant Surgery Fellowship
- Urologic Surgery Residency
- Vascular Surgery Fellowship

Jenkins makes phone calls in the children’s Post Anesthesia Care Unit (PACU).

Jenkins (center) checks on patient Alyse Bollman in the Pediatric Ambulatory Wound Service (PAWS) unit at St. Louis Children’s Hospital.

Jenkins eats lunch with fellow residents.

Jenkins assists pediatric surgeon Richard Bower, MD, in the OR.

Jenkins spends family time with his wife Rachel and sons Blake, 5, and Isaac, 2.

Jenkins eats lunch with fellow residents.
Surgeons Expand Services to Outlying Areas

CLINICAL OPERATIONS FOR THE Department of Surgery continue to be a strength despite the major challenges faced by almost all urban medical centers: declining reimbursements, the growth in uninsured patients, medical malpractice costs and increased competition from community hospitals and outpatient surgery centers.

Over the past year, the Department has been preparing for another challenge unique to the Washington University Medical Center and other St. Louis organizations. As the Missouri Department of Transportation (MoDOT) and construction contractors developed plans for rebuilding Interstate 64 — a vital traffic artery adjacent to Barnes-Jewish Hospital (BJH) and St. Louis Children’s Hospital (SLCH) — the Department expanded its operations to serve patients at outlying hospitals.

At the same time, surgeons continued to work with hospital officials at BJH and SLCH to enhance services, such as opening a valvular center for adults and a new pediatric cardiac intensive care unit.

Treatment Closer to Home

With reconstruction of I-64 now underway, patients may choose treatment away from the Washington University Medical Center. Their options include:

**Barnes-Jewish West County Hospital (BJWCH):** Thoracic, urologic and general surgeons have offices at this hospital, about 15 miles west of St. Louis. Colorectal surgeons staff a Center for Colorectal and Pelvic Floor Disorders (COPE Center), and plans have been finalized for vascular surgery, bariatric and cosmetic surgery centers.

**Progress West HealthCare Center:** Soon after this BJC medical center — located about 30 miles west of St. Louis — opened it doors, urologists and colorectal surgeons began seeing patients. Surgeons are at the hospital five days a week, and surgery is performed at the new site (complicated cases may still be done at BJH).

**Christian Hospital:** Two cardiothoracic surgeons offer services at this North St. Louis County hospital about 12 miles away from Washington University Medical Center.

**Other heart services:** The cardiothoracic surgery division has long been a leader in community outreach. The division also has offices at Anderson Hospital in Maryville, IL (about 20 miles east of St. Louis) and manages heart programs in Mount Vernon, IL, and Branson, MO.
Counting on the St. Louis VA

Washington University Surgeons Play Major Role in Veterans’ Surgical Care

DALE BARNHART IS ONE OF several thousand veterans who counted on the St. Louis VA Medical Center-John Cochran Division for quality surgical care this past year. For Barnhart and many other veterans, Washington University surgeons played a major role in that care.

Barnhart — a 59-year-old U.S. Army veteran — formerly managed an oil change business in Memphis. Over time, he developed degenerative disk disease and arthritis, was forced to go on disability, and moved back to the St. Louis area.

To compound his medical problems, Barnhart’s spleen became enlarged and he was diagnosed with a rare form of lymphoma last year. Surgery was urgently needed to remove his spleen — which was painful and could have ruptured — and so, in January 2007, Washington University Endocrine and Oncologic Surgery Chief Jeffrey Moley, MD, and Emily Rivet, MD, a Washington University surgical chief resident, performed a splenectomy.

The spleen, it turned out, was bigger than a football.

After a post-surgical medical problem — a blood clot, which VA doctors treated — Barnhart had an uneventful recovery from the splenectomy. He also received some additional good news: His blood tests for cancer came back normal with no sign of cancer.

Barnhart is now feeling much better and able to enjoy everyday activities, such as fishing and spending time with his daughter Darla.

A Surgical and Teaching Center

The Washington University and Saint Louis University medical schools have historically shared responsibility for surgical care and teaching at the St. Louis VA Medical Center. Moley is chief of Surgical Services for the Center, and 11 other faculty members from the Department of Surgery spend some time there. In addition, Washington University orthopedic surgeons, otolaryngologists, urologists and ophthalmologists perform surgery and train residents at the VA Center.

VA Medical Center surgeons perform about 3,500 operations a year. Currently, most patients are veterans of the Korean and Vietnam wars, and they are facing the medical problems of aging. However, some World War II and Iraq War veterans also are seen. “I am proud to serve this patient population,” says Moley. “And I am pleased to see veterans benefit from recent increases in support from the federal government.”

The St. Louis VA Medical Center also serves as a training ground for Washington University general surgery, ENT, ophthalmology, orthopedic and urology residents. “There is a wide range of pathology,” says Moley. “It’s a phenomenal training ground for the residents.”

He adds that VA medical centers are likely to become even more important as training sites for residents and medical students. “The need for training sites is going to increase dramatically with the shortage of physicians over the next few decades. VA medical centers are going to take on a greater role.”
IN A PERIOD OF INTENSE competition for research funding, the Department of Surgery continues to see substantial support for full-time researchers and for surgeons who devote a significant portion of their time to basic science investigations or clinical trials.

In fiscal year 2007, researchers received more than $21 million in annual NIH, non-federal and corporate-supported grants. The amount of funding increased by almost $600,000 over the past fiscal year while the number of awards increased from 129 to 138.

The Department continues to rank among the top academic departments of surgery in NIH support.

Despite continued financial support, Vice Chairman for Research Robert Thompson, MD, says the Department faces many of the same challenges being felt throughout academic medicine.

Thalachallour Mohanakumar, PhD, works with a tissue culture in his lab.
“It is essentially a flat NIH budget, and we see that at multiple levels with junior, mid-level and senior investigators,” he says. “In this type of environment, philanthropy becomes an increasingly critical element.”

Basic Science Research
The Department of Surgery has a strong core of full-time researchers and many operating surgeons who devote time to basic science research. Some leading examples are:

Organ transplant rejection: The lab of Thalachallour Mohanakumar, PhD, is focused primarily on defining the biochemical, molecular and functional nature of antigenic peptides presented in the context of HLA class I antigens and evaluating their clinical significance. Studies are focused on peptides involved in lung and liver transplant rejection and human cancers.

Prostate and epithelial carcinogenesis: The lab of Jeffrey Arbeit, MD, has developed novel mouse models of prostate and skin carcinogenesis and angiogenesis. The prostate and skin carcinogenesis models contain genes that when manipulated to be turned on, or shut off, control progression of premalignant lesions to invasive cancer. Arbeit’s angiogenesis studies focus on both cancer and ischemic vascular disease. His group has teamed up with Sam Wickline, MD, and Greg Lanza, MD, PhD, using nanoparticles loaded with chemotherapeutic drugs to inhibit prostate cancer growth in mice. Arbeit also has developed a novel model wherein angiogenesis can be turned on or off in the skin. Study of this model will glean insights important for developing optimal therapies for ischemic cardio- and peripheral vascular disease.

Intimal hyperplasia: Eric Choi, MD, a clinical and research faculty member, has developed a laboratory that studies intimal hyperplasia, a leading cause of restenosis and failure after arteriovenous access creation for hemodialysis and angioplasty and stenting for atherosclerosis. Choi’s laboratory collaborates with the departments of Medicine and of Cell Biology and Physiology.

Cancer Prevention and Control
Graham A. Colditz, MD, DrPH, joined the Siteman Cancer Center as the Niess-Gain Professor and associate director of Prevention and Control. He has overall responsibility for overseeing research, education and community outreach in cancer prevention sponsored by Siteman.

A nationally recognized leader in cancer prevention, Colditz formerly served as director of the Harvard Center for Cancer Prevention and leader of the Cancer Epidemiology Program at the Dana Farber/Harvard Cancer Center. He also is a member of the National Institute of Medicine, a prestigious independent group that advises the government on public health issues.

Colditz sees his position at Siteman as a chance to go beyond his past work to engage in an even more active translation of research into practice. His goals are to implement prevention strategies that work with clinicians and individuals as well as at the community level.
Peripheral Nerve Center

Giving

Tals Fund
Peripheral Nerve Center

THE WASHINGTON UNIVERSITY
Division of Plastic and Reconstructive Surgery is developing the first multidisciplinary peripheral nerve center in the United States, thanks to a generous donation from an Oklahoma City couple.

Moshe Tal is a researcher, developer and manufacturer of fuel additives, alternative fuels and engines, as well as a land developer. Tal and his wife Jacqueline will donate $1 million over 10 years to create and help fund the center.

Peripheral nerve fellow and neurosurgeon Justin Brown, MD, (standing) and senior scientist Daniel Hunter view distribution, pattern and size of peripheral myelinated nerve fibers using a computer program.
Jacqueline Tal is a patient of Susan Mackinnon, MD, the Sydney M. Jr. and Robert H. Shoenberg Professor of Surgery and chief of the Division. The surgical care she received for a rare malignant nerve sheath tumor led the couple to enthusiastically support the center and its mission — the advancement of treatment for peripheral nerve injury.

“If it wasn’t for Dr. Mackinnon and the exceptional staff at Barnes-Jewish Hospital, I wouldn’t have the use of my arm and hand and the quality of life I enjoy today,” says Mrs. Tal. “I can never thank them enough.”

Approximately 600,000 people suffer from upper extremity and lower extremity nerve injuries each year. Reconstruction of complex nerve injuries especially may be undertreated.

Mackinnon, a leader in peripheral nerve surgery, has been working on a technique of nerve transfers since the early 1990s. This procedure offers advantages over the current treatment of choice, nerve grafts, which typically require a lengthy recovery and produce average results at best.

Patients with nerve injuries throughout the body will be treated at the center. The center also will support basic science research on traumatic nerve injury. “Like any strong surgical program, the success of a peripheral nerve center requires support for clinical and basic science research, adequate operating time and facilities, outpatient and inpatient clinic resources, and academic office space,” says Mackinnon.

“I have no question that, with the support of the Tals, the Center will be very successful and offer a service that is simply not currently available in the United States.”
Washington University Department of Surgery

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

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

I-wen Wang, MD, PhD
Instructor in Surgery

Section of General Thoracic Surgery
G. Alexander Patterson, MD, Chief
Evarts A. Graham Professor of Surgery
Bryan F. Meyers, MD, MPH
Associate Professor of Surgery
Traves D. Crabtree, MD
Daniel Kreisel, MD, PhD
Alexander S. Krupnick, MD
Assistant Professors of Surgery

Section of Pediatric Cardiothoracic Surgery
Sanjiv K. Gandhi, MD
Associate Professor of Surgery

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

Division of General Surgery
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Section of Acute and Critical Care Surgery
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J. Perren Cobb, MD
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Douglas J. E. Schuerer, MD
Robb R. Whinney, DO
Assistant Professors of Surgery

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Ira J. Kodner, MD
Solon & Bettie Gershman Professor of Surgery
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Associate Professor of Surgery
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(back row, l-r) Brent Matthews, MD; Gregorio Sicard, MD;
William Chapman, MD; Jeffrey Moley MD; Steven Strasberg, MD;
Gerald Andriole Jr., MD; Brad Warner, MD, and James Fleshman Jr., MD.
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
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