Fostering Success
reaching the next level in research, patient care and education
ADVANCING the research, patient care and education missions of the Department of Surgery at Washington University School of Medicine is exceptionally challenging under any conditions. Yet it is even more arduous today in the face of the current health care economic environment, uncertain support for research and lack of funding for education.

This year’s annual report demonstrates that in 2009, faculty members found many ways to take our tripartite mission to a new level. In patient care, we entered the field of natural orifice transluminal endoscopic surgery (NOTES) — the newest frontier in minimally invasive surgery — and continue to be at the forefront in advanced surgical procedures such as nerve transfers. Our faculty helped lay the groundwork for new practices in prostate cancer screening and took public health initiatives to underserved areas in St. Louis and Missouri. And, once again, faculty members proved able mentors to our outstanding residents and fellows.

As we advanced our missions, we also strived to create the best possible working environment for faculty and staff; toward that end, three years ago, the Department of Surgery undertook an initiative to listen to faculty members’ perspectives on a wide range of issues and to improve the work environment. The process has been invigorating. Division and section chiefs gained new insights and learned that faculty members had given serious thought to such topics as mentoring and behavior.

A primary outcome of this initiative has been to renew our emphasis on outstanding mentoring at all levels. Steps also were taken to standardize the promotion process, re-examine the behavioral code of conduct, and offer programs on topics such as how to succeed in a “two-professional” marriage.

As a department, we look forward with great enthusiasm to witnessing the impact of our faculty initiative as it fosters our continued success.

Timothy J. Eberlein, MD
Bixby Professor of Surgery
Chairman, Department of Surgery
Director, Alvin J. Siteman Cancer Center
Introduction

Sometimes the path to moving forward starts with taking a step back. In academia, the desire to look past the horizon for our goals is deeply ingrained; but even though this approach brings great success, the Department of Surgery at Washington University School of Medicine recently decided it would be beneficial to reflect — to take stock of where we are succeeding and where there is room for improvement.

In this self-evaluation process, we focused on our most valuable asset: our people. Are faculty happy? Is the work mentorship a key departmental priority. Above Christopher Anderson, MD, Majella Doyle, MD, and William Chapman, MD, are fine-tuning a system for stereotactic liver surgery. Left Resident Nick Hamilton, MD, (left) and William Hawkins, MD, have joined forces to develop targeted immunotherapy for pancreatic cancer.

Success in academic medicine is a group endeavor that is built on strong relationships.
environment conducive to building a rewarding life? a successful career? a successful department?

What we learned underscores the central truth that success in academic medicine is a group endeavor built on strong relationships — particularly, mentoring relationships. As we move ahead, seeking ways to improve all aspects of our research, patient care and education programs, we now do so with a stronger, more unified approach centered on providing effective mentoring to junior faculty and trainees.

The results are exciting. Together, we are inventing new surgical techniques, conducting clinical trials of drugs and biomaterials, and strengthening our efforts to prevent disease at the individual and community level. On a more personal front, we are providing resources to improve our faculty’s quality of life. From the most senior faculty to the newest trainees, collectively sharing our enthusiasm, skills and knowledge is empowering us all to reach higher still.
In the surgical intensive care unit, resident Kathryn Rowland, MD, benefits from the experience of Brad Freeman, MD, and colleagues in refining her skills to care for the critically ill and injured.

**GENETIC RESEARCH** like many facets of medicine, may yield important answers in the study of critical illness and injury. But patients in the intensive care unit (ICU) frequently are in no condition to grapple with issues surrounding the collection of genetic data. For that reason, when a family member allows a patient’s DNA samples to be taken, it is difficult to know whether that decision actually reflects the patient’s wishes.

Brad Freeman, MD, Washington University trauma surgeon at Barnes-Jewish Hospital, is studying this ethical gray area to find ways to allow genetic information to be captured while preserving patients’ rights. As a clinician who treats emergent surgical problems and trauma, he knows well the rapid descent into critical illness and the dynamics this creates for the family.

“Decision makers are frequently confronted with a dilemma because they don’t understand the wishes of the individuals they represent in intimate detail,” Freeman says.
The Barnes-Jewish Hospital trauma center maintained its status as the only American College of Surgeons (ACS)-verified Level I trauma center in the region, after a re-verification by the ACS' Committee on Trauma earlier this year. The center is one of the busiest trauma programs in Missouri and the only ACS-verified Level I trauma center in Eastern Missouri, Arkansas and Southern Illinois.

John Kirby, MD, was named director of the surgical clerkship for third-year medical students. Kirby made a grand rounds presentation on necrotizing fasciitis at New York University in November 2008 — one of three supported by the Wendi Gordon Shelist Foundation to raise awareness of the devastating infection.

Brad Freeman, MD, serves on the Missouri Board of Healing Arts, which oversees all licensed clinical practitioners in the state.

Douglas Schuerer, MD, medical director of the Barnes-Jewish Hospital Trauma Center, and his colleagues face ethical issues every day in the surgery intensive care unit.

Oral Hygiene Prevents ICU Pneumonia

A study in the Barnes-Jewish Hospital surgical and trauma intensive care unit found that brushing teeth and applying mouthwash twice daily in patients on ventilators cuts cases of ventilator-associated pneumonia (VAP) in half. This life-threatening hospital-acquired infection strikes up to 300,000 patients every year. The study, led by ICU nurse specialists in conjunction with Washington University acute and critical care surgeons, was published in the January/February 2009 Journal of Intensive Care Medicine with Barnes-Jewish Hospital nurse specialist Carrie Sona, MSN, as first author and Douglas Schuerer, MD, medical director of the hospital’s trauma center, as senior author. Nurse specialist Lynn Schallom, RN, MSN, was a co-author.
Many patients with stage II colon cancer have a high risk for recurrence after surgery. Because the level of risk best determines the course of treatment, the ability to more accurately measure that risk would be a major step forward.

Matthew Mutch, MD, a colorectal surgeon and researcher at Washington University and Barnes-Jewish Hospital, has made significant progress in using genomic technology to characterize risk — and potentially guide treatment — in both patients with colon cancer and those with rectal cancer. This technology already has proven successful in the treatment of breast and other cancers.

“The goal is to develop the concept of tailored treatment based on genetic staging rather than pathologic staging,” says Mutch.

Stage II colon cancer patients at high risk of recurrence clearly benefit from tailored treatment.
The goal is to develop tailored treatment based on genetic staging.
Matthew Mutch, MD

chemotherapy, while low-risk patients may not need it. Distinguishing between these two groups with traditional pathologic staging is difficult, so Mutch’s lab helped develop a 23-gene “signature” — a prognostic tool based on evaluation of 23 genes. The signature yields a risk-hazard score, with those at high risk 13 times more likely to have recurrence than those at low risk.

A multi-center trial of the signature is underway at the Siteman Cancer Center at Washington University School of Medicine and Barnes-Jewish Hospital, along with the University of Utah, Vanderbilt University and Ochsner Clinic in New Orleans.

For patients with stage II and III rectal cancer, Siteman and Mutch are conducting a single-center trial as a first step in testing another gene signature.

“One of patients who receive therapy, typically 20 percent will have a complete pathologic response, meaning there is no residual tumor; 20 percent of patients will experience no immediate benefit; and the rest fall in the middle,” Mutch says. “We are trying to identify a signature consistent with complete response so those patients can be offered therapies short of radical resection.”

The next step will be a multicenter trial to further validate the gene signature.
ONE-YEAR-OLD Lillian Wilkerson was born with Multiple Endocrine Neoplasia Type 2B (MEN 2B), a rare inherited syndrome that leads to an aggressive form of thyroid cancer and other endocrine disease. Yet, thanks to advances developed largely at Washington University in the testing and treatment of the disease, the outlook for Lillian is bright.

Lillian is the daughter of Chris and Kim Wilkerson of Burlington, IA. Because Kim has MEN 2B, the couple had their daughter tested for the syndrome at birth. When Lillian tested positive, the Wilkersons contacted Jeff Moley, MD, chief of the Section of Endocrine and Oncologic Surgery at Washington University School of Medicine and a leading expert in the disease. Moley surgically removed Lillian’s thyroid when she was six months old.

“We operate on patients with MEN 2B as young as possible,” says Moley. “Often, they are born with thyroid cancer. Lillian
had C-cell hyperplasia, but she didn’t have any cancer.”

Moley waited to perform the surgery until Lillian had gained enough weight, but it was still a delicate operation. He had to remove the thyroid gland without damaging the parathyroid glands, which were small and difficult to visualize among other tissue. The operation went smoothly, and Lillian now is in the follow-up phase. She takes daily hormone pills, and her condition will be monitored closely.

Unlike Lillian, Kim did not learn she had MEN 2B until she developed thyroid cancer at age 14. An Iowa doctor removed Kim’s thyroid and referred her to Moley, who has treated her ever since. Moley performed two surgeries when Kim was in her late teens, removing a tumor in the left side of her neck and tumors in her adrenal glands.

The genetic testing that Lillian underwent was made possible by research conducted roughly 20 years ago by Washington University’s Samuel Wells, MD, and investigators at other centers. Their work identified the gene responsible for the MEN syndromes, leading to the preventive-surgery treatment approach — the first surgical prevention of cancer based on genetic testing. Moley has been a leader in performing the preventive surgery in children and in conducting translational research.

The Wilkersons are glad these advances have created a better future for Lillian and that Moley treated their daughter.

“My experience with Dr. Moley made it reassuring for him to work with Lillian,” Kim says.

Through genetic testing based on research conducted at Washington University, baby Lillian Wilkerson avoided inherited thyroid cancer through preventive surgery to remove her thyroid gland.

Highlights

- Bruce Hall, MD, PhD, MBA, presented original research on evaluating surgical quality nationwide as the lead-off session of the April 2009 American Surgical Association Annual Meeting in Indian Wells, CA. He also wrote a featured lead-off article in Annals of Surgery on the effects of specialization on quality. Hall continues to serve as co-director of Measurement and Evaluation for the American College of Surgeons (ACS) National Surgical Quality Improvement Program. He serves on advisory committees for the National Quality Forum and Joint Commission.

- Julie Margenthaler, MD, was appointed Missouri State Chair to the Commission on Cancer, a division of the ACS that regulates hospitals and sets standards for cancer care. She also participates in the St. Louis Integrated Health Network’s breast cancer workgroup, which studies breast cancer disparities among underserved and uninsured patients. The goal is to develop algorithms for screening, diagnosis and treatment to eliminate survival disparities.

- At the 2008 San Antonio Breast Cancer Symposium, Rebecca Aft, MD, PhD, and co-workers presented a poster regarding gene markers in bone marrow that predict disease recurrence. The research found that expression of the Twist1 and Pitx2 genes in bone marrow prior to treatment identifies patients at risk for early distant disease recurrence.

- Aft and others presented a poster on the effect of the drug Zometa® on bone marrow micrometastases in women undergoing chemotherapy for breast cancer at the 2009 American Society of Clinical Oncology Meeting in Orlando, FL.

- A microarray from Clinical Cancer Research shows tumor cell gene expression in bone marrow.

- Rebecca Aft, MD, PhD, reviews scans with breast cancer patient Donna Evert, who received Zometa® therapy as part of a clinical trial.
ABOVE David Linehan, MD, (right) performs a laparoscopic procedure. RIGHT Benjamin Tan, MD, (left) and Linehan review computed tomography scans of the abdomen and pelvis. Their collaboration is improving care for pancreatic cancer.

WHEN LINDA GRUCHALA of O’Fallon, IL, was diagnosed with pancreatic cancer, she and her husband, Rick, wasted no time in going online to seek the best care in the country. Their search led them to nearby Barnes-Jewish Hospital, and to treatment by Washington University surgeon David Linehan, MD.

Gruchala, 56, a school psychologist, benefitted not only from the high level of surgical expertise within the Section, but also from its heavy involvement in research to improve the outlook for the deadly disease.

She was fortunate that her cancer had not metastasized and that she was among the 15 percent of pancreatic cancer patients who can undergo tumor removal. Because pancreatic cancer often recurs, she also elected to receive an aggressive regimen of chemotherapy and radiation that was being evaluated in a clinical trial led by medical oncologist Benjamin Tan, MD, and Linehan, chief of the Section of Hepatobiliary-Pancreatic and GI (HPB-GI) Surgery at Washington University School of Medicine.

Pancreatic cancer trials examine new regimens, expand the possibilities.
Gruchala began her treatment in January 2006; more than three years later, she is cancer free.

“I felt very fortunate to be close to Barnes-Jewish Hospital and Washington University,” says Gruchala. “I really believe they are on the cutting edge for treatment of pancreatic cancer.”

Although Gruchala could not actually participate in the clinical trial because of insurance restrictions, she received the same regimen as did study patients. The single-center trial produced a 41 percent three-year survival rate compared to a typical survival rate of 15 percent for patients who undergo tumor removal and a standard regimen.

In other research, William Hawkins, MD, is principal investigator in a trial evaluating the immune modulator LAG-3 in patients also receiving the drug gemcitabine for advanced pancreatic cancer. In later clinical trials, he hopes to test LAG-3 with a vaccine to elicit an anti-tumor immune response. And Steven Strasberg, MD, is principal investigator of a multicenter trial to evaluate the effectiveness of TNFerade in combination with chemotherapy and radiation therapy in shrinking pancreatic tumors to allow for surgical removal. Preliminary national results are promising.

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The Section is committed to clinical research, and several multi-modality trials of novel therapies are underway in pancreatic cancer and in hepatic metastasis from colorectal cancer. An educational celebratory event is planned for November (Pancreas Cancer Awareness Month) honoring pancreatic cancer survivors.

The HPB–GI Section offers one of only 11 accredited HPB fellowships in North America. Established in 2006, the HPB Fellowship has quickly established itself as a leading program through its high caseload, range of hepatic/biliary and pancreatic cases, and inclusion of laparoscopic and transplant surgery. The HPB-GI and Abdominal Transplant Surgery sections have integrated their fellowship training programs, allowing for dual exposure of liver transplantation and hepatobiliary and pancreatic surgery for both sets of trainees. In this effort, the HPB-GI team of David Linehan, MD, Steven Strasberg, MD, and William Hawkins, MD, is joined by the liver transplant team, led by William Chapman, MD. Susan Logan, MD, the HPB fellow in 2008-2009, will stay on at Washington University to serve as a transplant surgery fellow during the upcoming academic year.

The Section’s surgeons take an aggressive approach to liver cancer that has metastasized from the colon. Patients who have previously been ruled out as surgery candidates because of the extent of their disease often can now undergo surgery, sometimes with staged, multiple procedures. Many patients have long-term cancer-free results.
THE FIELDS of surgery, biomedical engineering and genetics all play key roles in a new laboratory established within the Washington University Institute for Minimally Invasive Surgery (WUIMIS).

The Biomedical Engineering and Biomaterials Laboratory was established to study biomaterials used for soft-tissue or hernia repair. Its founders are Brent Matthews, MD, WUIMIS director and chief of the Section of Minimally Invasive Surgery and biomedical engineer Corey Deeken, PhD, who recently earned her doctorate at the University of Missouri.

“Our focus is evaluating biomaterials for the purpose of ultimately making better choices for the patient,” says Deeken, director of the lab. “We can pursue this type of research in a number of ways, and Dr. Matthews has allowed me a lot of freedom in shaping the future of our new lab.”

During the past decade, medicine has witnessed a revolutionary change in...
prosthetic biomaterials for hernia repair. These novel materials include composite mesh with absorbable and non-absorbable barriers, lightweight macroporous mesh, and meshes made of biological materials.

The lab builds on Matthews’ research into biocompatibility, assessing the degree to which biomaterials react with living tissue. The lab analyzes biomaterials removed from patients who undergo re-operations for hernias to understand how the body breaks them down over time. Deeken also is analyzing collagen gene expression in the human tissue that comes out with removed meshes to assess whether patients’ collagen is inherently healthy or unhealthy.

“One goal of the genetic component of our research is to see if some patients are never going to heal well enough to tolerate resorbable products,” Deeken says. “This information would allow us to choose the best mesh material for each patient before surgery.”

The lab also has applied for a National Institutes of Health economic stimulus grant to partner with the University of Missouri and three other institutions to create a biomaterials registry.

“The FDA is just starting to record problems with prosthetic mesh materials,” says Deeken. “One reason we want to establish this repository is to work with the agency on the potential risks for these materials.”
LIVER SURGEONS depend heavily on cross-sectional imaging, primarily computed tomography (CT) and magnetic resonance imaging (MRI), in planning liver surgery. The techniques help them decide who is a surgical candidate, how much liver to remove and what margins to leave around the tumor. But, until now, there has been no way to convert the scans into three-dimensional images to guide a surgery while it is in progress.

“Right now, most surgeons have a pretty good idea of what they’re planning to do, but it’s not precisely measured,” says Transplant Surgery Chief William Chapman, MD. “As a result, in a limited number of cases, they can have a positive margin [unknowingly leaving unseen tumor behind] or in complicated cases, damage an important structure that’s left behind.”

Ten years ago at Vanderbilt University, Chapman and a team of biomedical engineers set out to create an image-guidance system well positioned for the future.
Three-dimensional imaging techniques help surgeons plan surgical procedures and navigate more precisely once they are in the operating room.

System for liver surgery that would improve pre-operative imaging and track the exact anatomical location of instruments as surgeons navigated through the liver. Similar “stereotactic” systems already were in use by neurosurgeons, and Chapman and his team believed liver surgery was a logical progression.

Chapman continued the collaboration when he left Vanderbilt for Washington University School of Medicine in 2002, and the system received Federal Drug Administration (FDA) approval in 2009. While Chapman continues to verify the system’s accuracy, a clinical trial evaluating its efficacy is underway at Memorial Sloan-Kettering Cancer Center in New York, the University of Pittsburgh and the University of Florida.

At Barnes-Jewish Hospital, Chapman uses the system for pre-operative planning and has introduced it to liver surgeons Majella Doyle, MD, and Christopher Anderson, MD. Once testing is complete, plans are for all liver surgeons to be able to apply the technology in the operating room in selected cases.

“Image guidance is the way of the future in liver surgery, whether it’s the system we developed or some other system,” says Chapman. “It will become routine in planning, in ablative surgery where precise probe placement is difficult, and in complicated cases where you want surety of your margin.”

Jason Wellen, MD, who recently completed a transplant fellowship at Washington University, joined the faculty as an assistant professor in July 2009. His practice focuses on kidney and pancreas transplantation, vascular access surgery and laparoscopic live-donor kidney surgery. Volume for the kidney transplant program — currently at about 175 transplants a year — is expected to grow significantly in coming years.

The laparoscopic live-donor kidney program, launched two years ago, has grown to account for about half of the live kidney donations. When kidneys are not accessible by laparoscopic surgery, transplant surgeons offer the mini-nephrectomy, another minimally invasive approach.

Barnes-Jewish Hospital is one of the few centers in the country that offers liver transplantation to patients with bile duct cancer confined to the bile ducts. The treatment is currently part of a clinical trial at Siteman Cancer Center.

Washington University transplant surgeons found that selected patients with advanced hepatocellular carcinoma (HCC) whose cancers were successfully downstaged with transarterial chemoembolization (TACE) and then received transplants had excellent survival at 5 years (94.1 percent). Results for these stage III/IV HCC patients were similar to those of patients with stage II HCC who received liver transplants. Findings were published in the October 2008 issue of Annals of Surgery with Transplant Section Chief William Chapman, MD, as lead author.
ABDOMINAL AORTIC ANEURYSMS, potentially dangerous bulges in the artery that feeds blood to the abdomen, pelvis and legs, occur in 2 percent to 4 percent of Americans. Minimally invasive techniques developed in recent years have greatly improved the safety of surgical treatment; these techniques allow surgeons to use tiny incisions to insert supportive metal tubes called stents inside the artery, rather than the riskier option of replacing the bulging portion entirely via an open surgical procedure.

In clinical trials, Luis Sanchez, MD, (left) and Gregorio Sicard, MD, are evaluating stents whose ingenious design makes surgical treatment of abdominal aortic aneurysms possible for more patients.

Fenestrated stents are custom-made for each patient.
Yet for many patients — those whose aneurysm is too close to the arteries that feed the kidneys — stent placement has not been an option because the stent itself would block blood flow to the kidneys. For these patients, new stent technology being tested at Washington University School of Medicine may offer hope.

The school is one of 10 centers nationwide testing the new “fenestrated stents” in a clinical trial. The devices feature small openings — fenestrations — that can be strategically positioned to allow blood to pass into the renal arteries.

“Currently, none of these devices are FDA approved,” says vascular surgeon Luis Sanchez, MD. “We can combine some of the technologies that are currently approved and do something similar to fenestrations, but it’s not the optimal answer.”

A challenge to placing fenestrated stents is that the anatomy of the blood vessels involved varies from person to person; the stent and its openings must be shaped and sized correctly to work. To accommodate that variability, fenestrated stents are custom-made for each patient, based on measurements and images obtained from CT scans and reviewed by Sanchez and Vascular Surgery Chief Gregorio Sicard, MD, who serves as principal investigator at the medical school. The images are then approved and the device constructed by manufacturer Cook, Inc., which is also supporting the trial.

So far, three patients have been considered for the trial here, and one patient is enrolled.

“Designers at the company hope that eventually they can successfully accommodate variations in anatomy but still make the devices available off the shelf,” says Sicard. “That way, the devices could be stocked in your operating room.”

Fenestrated stents feature strategically placed holes that allow blood to pass from the abdominal aorta into renal arteries.

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**Highlights**

- Kathleen Raman, MD, is investigating the role of the RAGE receptor (receptor for advanced glycation end products) in aneurysm formation. RAGE is suspect because it is known to cause poor cell function in several inflammatory disorders, tumors and diabetes, and is known to be highly active in human aortic aneurysm tissue. Raman’s lab has developed an animal model to try to replicate the changes that are found in aneurysm tissue and to minimize the effect of the receptor or block it completely.

- As chair of the Society for Vascular Surgery (SVS) Outcomes Committee, Section Chief Gregorio Sicard, MD, has been instrumental in setting up a national registry for carotid artery disease, which may be expanded to include other vascular disease.

- Sicard recently was named an honorary fellow by the Ecuadorian Vascular Society and received an award for service to Spanish-speaking vascular surgeons at the Spanish Vascular Society National Convention in Valencia, Spain. Sicard previously was awarded a Lifetime Achievement Award from the Spanish Vascular Society.

- The section’s vascular surgeons established a clinic at Barnes-Jewish West County Hospital two years ago and now perform some inpatient and outpatient surgical procedures there. As part of the outreach effort, Brian Rubin, MD, and Patrick Geraghty, MD, offer treatment for varicose and spider veins at the Washington University cosmetic surgeons’ West County practice.

- Patrick Geraghty, MD, is involved in developing national practice guidelines for the treatment of lower extremity vascular disease through the SVS.

Barnes-Jewish West County Hospital
HEART SURGEON Jennifer Lawton, MD, always wears a glittering red pin on the lapel of her white coat as she makes her way around the Washington University Medical Center.

The pin — shaped like a cocktail dress and covered with red rhinestones — is a symbol for Go Red for Women, a campaign by the American Heart Association (AHA) to raise awareness about heart disease in women.

“People ask about it, which is very good,” says Lawton. “I tell them that more women die of heart disease every year than any other cause. A lot of women say, ‘You mean it’s not breast cancer?’ So it’s important education.”

Lawton combines advocating measures to improve women’s heart health with a busy surgical practice and running an active research laboratory. She serves on the volunteer board of the AHA and is part of its speakers’ bureau. She gives
lectures and grants interviews around the St. Louis area to teach people about heart disease in women.

Lawton’s practice includes surgical cases involving coronary artery bypass, valve repair and replacement, extraction and re-implantation of pacemakers, and emergency surgeries such as repairing tears in the aorta. Women especially seem to benefit from surgery performed on the beating heart, a technique in which Lawton specializes. Beating-heart surgery eliminates the need for the cardiopulmonary bypass pump, but is utilized by less than a third of heart surgeons nationally.

“If you use the heart-lung machine, the mortality in women is twice that of men,” says Lawton. “When you don’t, the mortality of women is roughly the same as that of men.”

In the lab, Lawton studies isolated heart cells to find out how to better protect the heart from stress. Recently, she received an AHA grant to study the heart-protective effect that occurs in heart muscle cells in response to various stresses. This ultimately could be used in heart surgery and preservation of hearts for transplantation and to benefit people having heart attacks or receiving angioplasty.

Lawton gives lectures and grants interviews to teach people about women’s heart health.

**Highlights**

- Adult cardiac surgery case volume grew by 15 percent during 2008. In the first six months of 2009, heart surgeons implanted as many left-ventricular assist devices and performed as many open aortic valve replacements as they did during all of 2008.

- Surgeon Nader Moazami, MD, and cardiologist Gregory Ewald, MD

- The Artificial Heart Program is scheduled to begin implanting heart failure patients with the HeartWare™ miniaturized ventricular assist device in late summer.

- Section Chief Ralph Damiano Jr., MD, was elected president of the Society of Clinical Surgery and is the president-elect of the International Society of Minimally Invasive Cardiac Surgery (ISMICS). He also was named editor of *Innovation*, ISMICS’s official publication.

- Jennifer Lawton, MD, received a grant from the American Heart Association to study the location of action of diazoxide — a heart-protective potassium channel opener — in human heart muscle cells. Ralph Damiano, MD, Michael Pasque, MD, and Marc Moon, MD, have extramural funding from the National Institutes of Health.

- Cardiothoracic Surgery Fellowship Director Marc Moon, MD, was named to the Executive Committee of the Thoracic Surgery Directors Association, which oversees fellowship training.

- Hersh Maniar, MD, who completed his fellowship training at Washington University in 2007, joined the faculty as an assistant professor.

- Washington University School of Medicine and Barnes-Jewish Hospital are one of only 15 heart centers selected by the U.S. Food and Drug Administration to evaluate an experimental device used to replace defective aortic valves without opening the chest wall or using a heart-lung machine.
INCREASING PATIENT SATISFACTION and achieving an optimal length-of-stay are constant goals of hospitals and physicians. But despite best efforts, these objectives can be difficult to obtain.

There are many reasons to reduce length-of-stay when feasible; it reduces costs, and patients typically fare better at home, where they are more comfortable and less susceptible to hospital infections.

Although a series of efforts to decrease length-of-stay for lung cancer patients at Barnes-Jewish Hospital had been successful, thoracic surgeon Traves Crabtree, MD, says he found himself wondering what else could be done to improve on the effort.

In addition to tackling purely medical issues, patient expectations would have to be taken into account, Crabtree says. For example, even patients deemed ready for early discharge do not always feel ready.
“Patients are usually better off at home, but if you tell someone they are ready to go on day three, they think something’s wrong,” he explains.

It occurred to Crabtree that a novel approach was needed. His thought: a well-produced video might help patients undergoing lung-tumor surgery — either through a video-assisted thoracic surgery (VATS lobectomy) or a thoracotomy — to know what to expect and to understand why a shorter stay may be possible.

Crabtree began a script independently and then partnered with Ethicon Endo-Surgery, a company interested in using the video more broadly to prepare patients for lung cancer surgery. Another company, Discovery Health, worked with Ethicon to produce a video that will be used nationwide, as well as a custom version for Washington University School of Medicine.

The video features 69-year-old Royce Dettmer of Edwardsville, IL, a patient of Crabtree’s, as he progresses from the pre-operative clinic visit to the pre-anesthesia holding area and post-surgical care.

The recently completed video will be used by all Washington University thoracic surgeons to prepare patients for lung surgery. In addition, a survey is underway to measure how the video and other written materials affect patient satisfaction.

Dettmer thinks the video is a great idea. “The more informed you are, the more relaxed you are,” he says.

A survey will evaluate the impact of a patient-education video featuring surgeon Traves Crabtree, MD, and patient Royce Dettmer.
PRESCOTT WEBB is a happy, energetic and talkative 3 year old, thanks to surgical advances that have made it possible to correct the serious heart defect he carried at birth.

Prescott is the son of Brian and Kathleen Webb of Belleville, IL. They learned that Prescott had hypoplastic left heart syndrome — a once-fatal condition in which the heart’s left side is severely underdeveloped — during a routine exam when Kathleen was 20 weeks pregnant.

Prescott would need medical treatment immediately after birth, surgery days later, then at least two other surgeries after that. The procedures would establish the right ventricle, instead of the left, as the main heart chamber pumping oxygenated blood to the body; circulation to the lungs, normally the job of the right ventricle, would occur with a shunt bypassing the heart.

The Webbs carefully looked at their options before selecting the team at Washington University and St. Louis...
Children's Hospital, led by Pediatric Cardiothoracic Surgery Chief Charles Huddleston, MD, and pediatric cardiologist Gautam Singh, MD.

“Brian and I both agreed Dr. Huddleston was very thorough with his answers, as was the team, and we liked that,” says Kathleen. “We also felt that Dr. Huddleston and Dr. Singh could relate to us and were very caring.”

Prescott had his first operation within a week of birth and three additional operations. Recovery after the fourth was complicated by diminished blood flow to the left lung, which surgeons treated with a stent to dilate a partially blocked artery.

“We combined advanced technical and medical therapies with the advanced capabilities of our cath lab to treat problems that previously would have required re-operation,” says Huddleston. “After that, he recovered normally.”

Fifteen to 20 years ago at Washington University and other major medical centers, transplantation was the preferred treatment, because surgery on the native heart still led to high mortality. Today, modifications to the operation and postoperative care result in much better survival.

Prescott will require lifelong follow-up by a cardiologist and additional heart procedures, but Kathleen and Brian are happy that his early medical problems are behind him.

“He's doing extremely well and is very happy,” Kathleen says.

Washington University surgeons offer pediatric heart transplantation to an increasing number of high-risk patients who are turned down at other medical centers. St. Louis Children's Hospital (SLCH) is one of the most active pediatric heart transplant programs in the United States, with patients coming from as far away as Florida, Minnesota and Texas.

SLCH is an international center for the treatment of children with abnormalities in surfactant metabolism of the lungs. Neonates with the rare inherited disorder are frequently referred to the hospital for lung transplantation. The medical staff’s reputation for excellent care of these patients is a reflection of the collaboration among cardiothoracic surgeons, neonatologists and other specialists.

Two patients at SLCH have been enrolled in the U.S. clinical trial of the Berlin Heart, a temporary cardiac-assist device used to bridge pediatric patients to transplant. The Berlin Heart is approved for use at pediatric hospitals in Europe, but has only been available in the United States through case-by-case FDA approval. Cardiothoracic surgeon Sanjiv Gandhi, MD, is principal investigator of the Washington University trial.

The surgical volume of adult patients with congenital heart disease is growing at 10 percent to 15 percent a year. Pediatric cardiothoracic surgeons perform all but the most complex cases at Barnes-Jewish Hospital and collaborate with cardiologists in the treatment of these patients.
WHEN JACQUELINE SAITO, MD, left the University of Alabama-Birmingham to join the Division of Pediatric Surgery at Washington University School of Medicine, she was charged with helping move the program to the next level of several frontiers: minimally invasive surgery, multidisciplinary care of children with short bowel syndrome and clinical investigation.

“Jackie was recruited because of her extensive training and experience in pediatric laparoscopic surgery and her interest in short bowel syndrome,” says Pediatric Surgery Chief Brad Warner, MD. “She brings to the table many elements that complement our program.”

Saito trained under nationally recognized pediatric laparoscopic surgeon Keith Georgeson, MD, at the University of Alabama-Birmingham and had incorporated laparoscopic surgery into her pediatric surgical practice there for more than five years. Like Georgeson, she promotes the application of minimally invasive surgery in children, which can result in less postoperative pain, shorter recovery and a faster return to activities.
Saito already has performed two laparoscopic surgeries in patients with congenital diaphragmatic hernia (CDH). CDH—a condition in which an undeveloped diaphragm allows abdominal organs to enter the chest cavity—often leaves babies too compromised for laparoscopy. However, Saito is among a limited number of surgeons who perform minimally invasive surgery when lung function is good enough to require only a regular ventilator.

Saito also is charged with enhancing the care of patients with short bowel syndrome, supporting the work of Warner as a national leader in the surgical treatment and study of the disease.

Even with the best surgical care, short bowel syndrome poses unique nutritional challenges for children because of the loss of intestine through disease and surgical removal. Saito is organizing a new clinic that will increase collaboration among specialists and allow patients to receive “one-stop” care.

As if these projects were not enough, Saito is pursuing a graduate degree in clinical investigation so she can offer a translational component to the Division’s basic science research into short bowel syndrome. “This is a great example of an opportunity for a partnership between the two sides,” she says.
DATA ON NORMAL DEVELOPMENT
and form of the skull and face are critical
to research in medicine and anthropology.
Modern three-dimensional imaging has
improved the understanding of structural
relationships in the craniofacial field,
but such images have not been available
in a way that allows for widespread
access and quantitative evaluation. That
is, until now.

During a year-long project, pediatric
plastic surgeon Alex Kane, MD, and
Washington University medical student
Angelo Lipira worked with a team of
Department of Surgery information
technology (IT) professionals to create

"If there are normal data available,
researchers can select any sort of
craniofacial problem that might afflict
children and have a normal group with
which to compare characteristics."
Alex Kane, MD

With internet database,
craniofacial researchers
share the vision
an Internet-based collection of three-dimensional craniofacial images representing normal development and form. The web site, called “CranioBank” (craniobank.wustl.edu), contains 3D images of 1,279 children from birth to 18 years of age with no history of craniofacial or congenital disorders.

“The Internet provides an ideal environment to exchange 3D data,” says Kane, director of the Cleft Palate and Craniofacial Institute at St. Louis Children’s Hospital (SLCH). “If there are normal data available, researchers can select any sort of craniofacial problem that might afflict children and have a normal group with which to compare characteristics.”

Using a 3D camera system, the researchers obtained images of volunteer pediatric patients and siblings at two community pediatricians’ offices and a SLCH outpatient clinic. The system captures the subject from multiple angles and assembles photo-realistic surface 3D images of the entire head.

On the web site, images can be retrieved by age, gender, ethnicity and handedness criteria, and users can choose among numerous established points of interest to calculate distances and other evaluations. Kane and Lipira presented CranioBank at the American Cleft Palate-Craniofacial Association 2009 Annual Meeting and will publish in an upcoming issue of Plastic and Reconstructive Surgery.

Kane credits Lipira, who participated as part of a Doris Duke Research Fellowship, and the surgery IT team, led by senior programmer analyst Anthony Payne, for the project’s success. “The web site is a testimonial to Angelo’s persistence and the generous time devoted by our IT staff,” says Kane.

CranioBank makes 3D data available to clinicians worldwide via the Internet. All visitors may run searches and use the site’s distance calculator; registered users may view images and download data.

Since opening last May, the West County cosmetic surgery practice has been very busy. Principal surgeons Terry Myckatyn, MD, and Marissa Tenenbaum, MD, offer the latest techniques in cosmetic and reconstructive plastic surgery including top-of-the-line lasers for skin and vein treatment and hair removal.

Training in the Plastic Surgery Residency has expanded from two to three years — a change mandated by the Plastic Surgery Residency Review Committee of the Accreditation Council for Graduate Medical Education. Beginning with residents who matched to the residency in 2009, trainees will spend three years in the general surgery residency and three years in plastic surgery. The impetus for the additional year was the change in prerequisite general surgery training over the past decade with more emphasis in minimally invasive surgery. The committee also added required experience in anesthesia, orthopaedic trauma, dermatology and oculoplastics.

An interactive web site is under development for military physicians treating soldiers with improvised explosive device (IED)-inflicted and other conflict-related injuries of the upper and lower extremities. The site is made possible through a grant received by Ida Fox, MD, and Justin Brown, MD, from the Henry M. Jackson Foundation for the Advancement of Military Medicine. The goal is to improve patient outcomes by posting a framework for obtaining and organizing patients’ basic histories, exams and diagnostic assessments, then to develop a comprehensive treatment plan using the latest techniques in peripheral nerve repair.
The collaboration among (left to right) R. Sherburne Figenshau, MD, Robert Grubb III, MD, and Gerald Andriole, MD, goes back to Grubb’s time as a resident in the division.

THE DIVISION OF UROLOGIC Surgery at Washington University School of Medicine is a leader in the study of prostate cancer, particularly in the area of screening. As new chapters in evaluating and preventing prostate cancer were written this past year, the Division continues to be a central player.

Twenty years ago, the prostate-specific antigen (PSA) test was evaluated at Washington University, launching it as the standard blood test for prostate cancer. But the test produces some false-negatives and false-positives, and how often to screen is a subject of debate.

In March 2009, findings of the Prostate, Lung, Colorectal and Ovarian (PLCO) Cancer Trial were published in the New England Journal of Medicine. This major U.S. study of 75,000 men, half of whom were randomized to annual screening, concluded that annual
PLCO concluded that annual screening does not reduce deaths among men with limited life expectancies.

Both urologists continue work on PLCO as the trial culs results from younger men with the goal of making broad screening recommendations.

Prostate cancer prevention and genetic analysis are other strong areas of the Division’s research. In a randomized trial of more than 8,000 men at 250 sites worldwide, the drug dutasteride, widely used to shrink enlarged prostates, was shown to lower prostate-cancer risk by 23 percent in men with an increased risk of the disease. Andriole was chairman of the trial’s steering committee. And Adam Kibel, MD, director of urologic oncology, is seeking genetic markers to distinguish dangerous, fast-growing prostate cancers from less-threatening cases and examining dietary and environmental influences on prostate health.

screening does not appear to reduce deaths among men with limited life expectancies.

“For men with a life expectancy of seven to 10 years or less, it’s probably not necessary to be screened for the disease,” says Andriole, Division chief, lead author and chairman of PLCO’s prostate committee. “If you’re 75 and in poor health, you can probably stop worrying about PSA.”

Andriole and Robert Grubb III, MD, also presented eight abstracts on PLCO projects at the American Urological Association Annual Meeting in April 2009.

PLCO trial. The experience formed a solid foundation for Grubb’s research career. He returned to St. Louis to join the Division’s faculty in 2005.

“He was able to get involved in a lot of projects,” says Andriole, chairman of the PLCO prostate committee. “Getting your feet on the ground in research takes a few years. Robert is already well recognized for his work with PLCO.”

PLCO concluded that annual screening does not reduce deaths among men with limited life expectancies.
NOT ALL GENERAL SURGERY residents entering their research years at Washington University School of Medicine have experience in medical research. But all finish their work with wide-ranging experience that often translates into future success in academic surgery.

Most residents spend two to three years of dedicated research time in the middle of the training program. Residents typically pursue research opportunities in the surgical or other scientific laboratories at Washington University, but may earn an advanced degree or work in an outside lab. All PGY-2 residents are required to apply for research funding to gain experience in the funding process.

“Ninety-nine percent of what you can do in the world of medical research you can do at Washington University,” says Robert Thompson, MD, vice chair for research.
The breadth of research opportunities is evident in the research of the three finalists for the 2009 Samuel A. Wells Jr., Resident Research Day Award: Amy Fox, MD, Nick Hamilton, MD, and Amy Moore, MD.

Fox developed a mouse model of sepsis with cancer, which improved on an existing model to better reflect human disease. The work, conducted in the lab of Craig Coopersmith, MD, could lead to better translation of research into effective treatment.

Hamilton, in the lab of William Hawkins, MD, focused on targeted immunotherapy for pancreas cancer, using the body’s own immune system to attack cancer cells.

Moore worked in the lab of Plastic and Reconstructive Surgery Division Chief Susan Mackinnon, MD, and Gregory Borschel, MD, contributing to development of a transgenic rat model that enables researchers to study peripheral nerve regeneration in vivo directly under fluorescent and confocal microscopy.

Fox says her experience opened a window into the opportunities for academic surgeons. “Improving what we know about a disease process can affect tons of patients. In the clinic, I can only affect one patient at a time.”

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Christopher Anderson, MD, was named associate program director of the General Surgery Residency, which is directed by Mary Klingensmith, MD. Anderson replaces trauma surgeon Brad Freeman, MD, who recently completed a two-year term. The position is required by the Accreditation Council for Graduate Medical Education for larger general-surgery residency programs.

General-surgery residents studying trauma resuscitation are now team trained in the Howard and Joyce Wood Simulation Center, which opened in fall 2008. The hands-on, interactive training teaches residents how to recognize and manage medical problems and work as a team in a crisis. Such training previously was taught exclusively in the classroom.

Felix Fernandez, MD, became the first trainee to graduate from the Early Specialization Program (ESP) in cardiothoracic surgery at Washington University. Under the program, Fernandez spent his first four years in the general surgery residency before entering the cardiothoracic surgery fellowship. Spencer Melby, MD, who graduated from the general surgery residency in 2009, and Rochus Voeller, who will graduate in 2010, are currently in the cardiothoracic surgery ESP. Christopher Chambers, MD, was the first to complete the ESP program in vascular surgery in 2008.

The General Surgery Residency Program had a competitive match for entering residents and placed its graduating residents in leading fellowship programs that provide training in diverse specialties.

Simulation technology is key to team training for trauma care.
FOR THE PAST TWO YEARS, portions of Interstate 64 — a major traffic artery adjacent to Washington University School of Medicine, Barnes-Jewish Hospital (BJH) and St. Louis Children’s Hospital (SLCH) — have been closed for reconstruction. By disrupting access to Washington University Medical Center, the shut-down posed the potential to cause major financial challenges to the Department of Surgery and the two hospitals.

However, the expected downturn in clinical volume has not materialized for the Department, and both hospitals remain resilient. In fact, during the construction period, surgeons have seen an increase in visits, and in procedures and work relative value units (work RVUs); these three measures actually set records in 2009.

Timothy Eberlein, MD, Bixby Professor and chairman of the Department of Surgery, attributes the strong financial numbers to concerted efforts that included core-service enhancements, strategic service expansions, innovative change, and meeting new challenges.

“This would be a paradigm shift for any department.”
Timothy Eberlein, MD
expansion away from the urban medical center, and marketing.

“Our senior leadership developed strategies,” says Eberlein. “People tried to be very, very thoughtful on all these issues.”

Expansion at Suburban Hospital

Barnes-Jewish West County Hospital (BJWCH), located 20 miles west of the Medical Center, served as a focal point for much of the off-campus expansion.

West County Plastic Surgeons of Washington University, which opened its facility at BJWCH in May 2008, saw continued growth in its patient base as it pursued an integrated marketing program.

Marissa Tenenbaum, MD, who completed a cosmetic surgery fellowship under world-renowned Los Angeles surgeon Grant Stevens, MD, joined Terence Myckatyn, MD, at the practice in February 2009. These two principal surgeons offer the latest techniques in cosmetic and reconstructive plastic surgery including laser therapy for treating wrinkles, pigmentation problems and uneven skin texture.

The establishment of cosmetic surgery at BJWCH has been complemented by the addition of many other surgical services over the last two years: vascular, minimally invasive/bariatric, hepatobiliary-pancreatic, transplant, breast, pediatric, pediatric urologic and pediatric plastic surgery.

Although many surgeons at BJWCH only see patients in the outpatient clinic, a growing number are performing surgical procedures there. The new services were preceded by urology, colorectal surgery and thoracic surgery, which have long-standing practices at BJWCH.

Outstate Effort

As an outreach effort, Vascular Surgery Chief Gregorio Sicard, MD, Colon and Rectal Surgery Chief James Fleshman, MD, and colorectal surgeon Matthew Mutch, MD, began seeing patients at Phelps County Regional Medical Center in Rolla, MO, about 100 miles southwest of St. Louis.

Plastic surgery is one of several surgical subspecialties offered through a major clinical expansion effort in suburban St. Louis County.

Balancing the many duties of an academic surgical or research career can be difficult. What’s more, the task becomes even harder when combined with family life.

Over the past three years, the Department of Surgery has taken an introspective look at the challenges faced by its faculty: how effectively younger faculty members are mentored, fairness in promotion, behavior and other issues. Faculty were surveyed, and leaders performed 360-degree evaluations.

“We’ve seen a large number of faculty — in addition to our leaders — come together around these various issues, solve problems and come up with new ideas,” says Timothy Eberlein, MD, Bixby Professor and chairman of the Department of Surgery. “Many of the faculty had thought about these things, whether it was mentoring, behavior or other issues. We received some very good ideas and a lot of involvement.”

Resulting initiatives include improving mentoring; re-evaluating criteria for promotion, which were captured through an online CV system; revising and publishing a code of conduct for faculty and employees on the departmental website; and offering special programs for faculty on topics such as making family life work in a household with two professional parents.

“This would be a paradigm shift for any department,” says Eberlein. “I am not aware of any other surgical department that has undergone this type of self-evaluation and innovative change.”
Public health researchers find collaboration is key

SINCE HIS GRADUATE SCHOOL days at Harvard University, Graham Colditz, MD, DrPH, has been interested in collaboration and translating his research into effective cancer prevention.

“One of the things that separates some of my work from others, who are happy just to sharpen the focus a bit, is to say: ‘We’ve done enough of this; now let’s work out how to make a difference in the community,’” says Colditz, the Niess-Gain Professor and associate director of Prevention and Control for Siteman Cancer Center.

Colditz came here in fall 2006 after 23 years at Harvard University, where he served as director of the Harvard Center for Cancer Prevention and leader of the Cancer Epidemiology Program at Dana Farber/Harvard Cancer Center. At Siteman, he saw an opportunity to more actively translate his research into practice and expand cancer-prevention efforts in the region and state.

By participating in events such as the Prostate Cancer Community Partnership, Graham Colditz, MD, DrPH, (left) aims to improve understanding of cancer prevention at the community level.

“We’ve done enough of this; now let’s work out how to make a difference in the community.”

Graham Colditz, MD, DrPH
As part of his collaborative efforts, Colditz works with chronic-disease prevention expert Ross Brownson, PhD, who has joint appointments with the Department of Surgery and the George Warren Brown School of Social Work, and with epidemiologist Katherine Stamatakis, PhD, to improve the state public-health pipeline. An initiative with epidemiologist Kathleen Wolin, ScD, aims to improve health care access in rural Missouri, and a project with public-health researcher Aimee James, PhD, MPH, would ramp up colon cancer screening in the underserved in St. Louis.

From Harvard, Colditz brought the Your Disease Risk web site, a screening tool that offers extensive information about risk factors and prevention for cancer and other diseases. The site, which receives about 1,300 visits a day at www.yourdiseaserisk.wustl.edu, spurred development of an online screening tool for Washington University employees and may serve as a model for similar tools elsewhere.

“We all want to think with prevention that we do something today and we’ve solved the problem tomorrow, but some of this stuff is complex and has multiple moving parts,” says Colditz. “You’ve got to get them all moving before you have everyone covered with a prevention program.”
The Robert K. Royce Distinguished Professorship in Urologic Surgery recently established the Robert K. Royce Distinguished Professorship in Urologic Surgery to honor a long-time faculty member and champion of the division. “Dr. Royce has been an inspirational role model for generations of Washington University urologists, including me and many of our current faculty,” says Division Chief Gerald Andriole Jr., MD, a colleague of Royce’s who will assume the professorship.

Andriole — who joined the faculty in 1985 after completing his urologic residency at Harvard Medical School and a urologic oncologic fellowship at the...
National Cancer Institute — has served as division chief since 1999. He is an international leader in research involving prostate cancer screening and prevention and clinical trials.

Robert K. Royce’s Distinguished Career

ROYCE, A NATIVE OF Mississippi, spent his first two years of medical school at the University of Mississippi before transferring and completing his training at Washington University School of Medicine in 1942. After a year of rotating internship at the University of Chicago and two years in the Army Medical Corps — during which he served in the 35th Infantry Division at the Battle of the Bulge — Royce began his surgical training at Barnes Hospital and never left.

Royce completed his urologic residency under chief Dalton K. Rose, MD, in 1949, and joined Rose and his partner, Justin Cordonnier, MD, in clinical practice. Royce saw Cordonnier become the first full-time head of urology, and Royce also played key roles in the division in the years to come. In 1972, Royce was placed in charge of residency training, a role in which he served for 15 years, and he was interim chief of the division from 1973 to 1975.

Royce also served on the search committee that recruited William Fair, MD, as chief in 1975. Fair held that position for nine years and is credited with recruiting many outstanding faculty members. “The division has been expanding ever since,” Royce notes.

Royce was a member of the clinical faculty at Washington University until he closed his private practice in 1989, then was a full-time member of the Division of Urology until he retired in 1994.

Since then, Royce has stayed in touch with the division. While interim chief, he established the Cordonnier Society, which funds a visiting professorship each year and a social hour for the Washington University resident alumni at the Annual American Urological Association Meeting. In 2001, he was the honored guest at a resident reunion at a mountain resort in Montana.

In retirement, Royce enjoys golf and exploring nature at a country home. “I find it difficult to believe I have been so lucky!” he exclaims.

New Endowed Chairs Support Minimally Invasive Surgery, Cancer Research

With the help of generous donors, two additional new chairs in urology have been established.

- The Holekamp Family Chair in Urology was established by Bill Holekamp and his wife, Kerry. Bill Holekamp is an entrepreneur, philanthropist and Barnes-Jewish Hospital Foundation board member. Bill and Kerry are long-standing supporters of research into prostate cancer and other cancers.

- The Taylor Family and Ralph V. Clayman Chair in Minimally Invasive Urology was established by Jack Taylor, founder of Enterprise Rent-A-Car, with a challenge gift in honor of Ralph V. Clayman, MD. Clayman, considered one of the fathers of laparoscopic urology, served on the faculty from 1984 to 2001. Many of his colleagues, patients and friends honored him by contributing to meet the challenge match.

R. Sherburne Figenshau, MD, a professor of surgery who joined the division in 1993, was named the Taylor Family and Ralph V. Clayman Chair. In addition to specializing in minimally invasive urologic surgery, he has been very active in the investigation and use of new laparoscopic methods.

Unrestricted Gifts to the Department of Surgery

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Faculty

Timothy J. Eberlein, MD, Chairman
Bixby Professor of Surgery; Director, Alvin J. Siteman Cancer Center

Gregorio A. Sicard, MD
Eugene M. Bricker Professor of Surgery; Executive Vice Chairman

Ralph J. Damiano Jr., MD
John M. Shoenberg Professor of Surgery; Vice Chairman for Clinical Services

Robert M. Thompson, MD
Vice Chairman for Research

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Jennifer S. Lawton, MD
Associate Professor of Surgery

Nader Mozami, MD
Associate Professor of Surgery

Michael Crittenden, MD
Chief of Cardiothoracic Surgery, St. Louis VA Medical Center-John Cochran Division

Hersh S. Maniar, MD*
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I-wen Wang, MD, PhD
Assistant Professor of Surgery

Division of Cardiothoracic Surgery

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Everts A. Graham Professor of Surgery; Director of Lung Transplantation

Traves D. Crabtree, MD
Daniel Kreisel, MD, PhD
Alexander S. Krupnick, MD
Varun Puri, MD*
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John M. Shoenberg Professor of Surgery

Marc R. Moon, MD
Joseph Bancroft Professor of Surgery

Nabil A. Munfakh, MD
Michael K. Pasque, MD
Professors of Surgery

Critical Care Service in the Cardiothoracic Intensive Care Unit

Michael S. Avidan, MBChB, FCA, Chief
Associate Professor of Anesthesiology and Surgery

Laureen L. Hill, MD
Vice Chair, Department of Anesthesiology; Associate Professor of Anesthesiology and Surgery

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Michael H. Wall, MD
Associate Professors of Anesthesiology and Surgery

R. Eliot Fagley, MD
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Solon and Betty Gershman Professor of Surgery

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Bashar Safar, MBBS, MRCS
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Section of Endocrine and Oncologic Surgery

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Professor of Surgery

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Pruett Professor of Surgery; Carl Moyer Departmental Teaching Coordinator

David P. Jaques, MD
Professor of Surgery; Vice President of Surgical Services, Barnes-Jewish Hospital

William G. Hawkins, MD
Associate Professor of Surgery

Section of Minimally Invasive Surgery

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Mary E. Klingensmith, MD
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Associate Professor of Surgery

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The Department of Surgery thanks Niraj Desai, MD, for his dedication and insight as a faculty advisor to the Annual Report over the past five years.
Barnes-Jewish Hospital
Barnes-Jewish Hospital, a 1,228-bed facility, is the largest hospital in Missouri. With a premier reputation in patient care, medical education, research and community service, the hospital has been ranked among an elite group of the nation’s best academic hospitals on the U.S. News & World Report Honor Roll since 1993, ranking #9 in the nation in 2009. It is the first adult hospital in Missouri to be awarded Magnet status, nursing’s highest honor for clinical excellence. Barnes-Jewish Hospital provides clinical experience for medical students in all clinical departments except pediatrics. The medical staff is composed exclusively of Washington University full-time or voluntary School of Medicine faculty physicians.

St. Louis Children’s Hospital
St. Louis Children’s Hospital is staffed exclusively by Washington University faculty physicians. It is placed among the top 10 children’s hospitals in the country by U.S. News & World Report, and is ranked fifth-best by Parents magazine. It provides a full range of services for children and their families across a 300-mile service area and beyond. The school’s comprehensive pediatric specialty services at Children’s Hospital include newborn medicine, cardiology and the world’s leading pediatric lung transplant program. St. Louis Children’s Hospital provides extensive community outreach services, including home care services, pediatric mobile intensive care units, affiliations with regional hospitals and physicians, support groups, educational programs, and a free health information line staffed by pediatric nurses.

The Alvin J. Siteman Cancer Center
The Alvin J. Siteman Cancer Center at Washington University School of Medicine and Barnes-Jewish Hospital is an international leader in cancer treatment, research, prevention, education and community outreach. It is the only cancer center in Missouri and within a 240-mile radius of St. Louis to hold the prestigious Comprehensive Cancer Center designation from the National Cancer Institute and membership in the National Comprehensive Cancer Network. Siteman offers the expertise of more than 350 Washington University research scientists and physicians who provide care for nearly 8,000 newly diagnosed cancer patients each year. These scientists and physicians currently hold more than $130 million in grants. Siteman is ranked among the top cancer centers in the country each year by U.S. News & World Report.

Gifts to the Department of Surgery
The Department of Surgery welcomes your support. Ways to make a gift include annual unrestricted giving such as membership in the Eliot Society, gifts for education of residents and fellows, support for research and endowment, and planned gifts and bequests.

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