A photograph of a surgeon in an operating room. The surgeon is wearing blue scrubs, a blue surgical cap, glasses, and a white surgical mask. They are looking down, focused on their work. In the background, there are several bright surgical lights. The overall scene is brightly lit and professional.

ANNUAL REPORT 2015

VALUE

for and from people, actions, and results



EMORY
UNIVERSITY
SCHOOL OF
MEDICINE

Department of Surgery

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25+ Years of Service

On the cover

Surgical oncologist Monica Rizzo in the operating room. Rizzo's allegiance to her patients is also expressed by her position as an American College of Surgeons Commission on Cancer Liaison Physician at Emory University Hospital Midtown, a role in which she oversees quality measures and initiatives to assure excellence in cancer care at the hospital.



Department of Surgery

FROM THE CHAIR



Perception is all. Those who interpret the world negatively may shout that the sky is falling. I don't see it that way. When I look up, I see blue and clouds hovering calmly above.

Anxiety and uncertainty are easy to come by these days, but can only define our reality if we refuse to

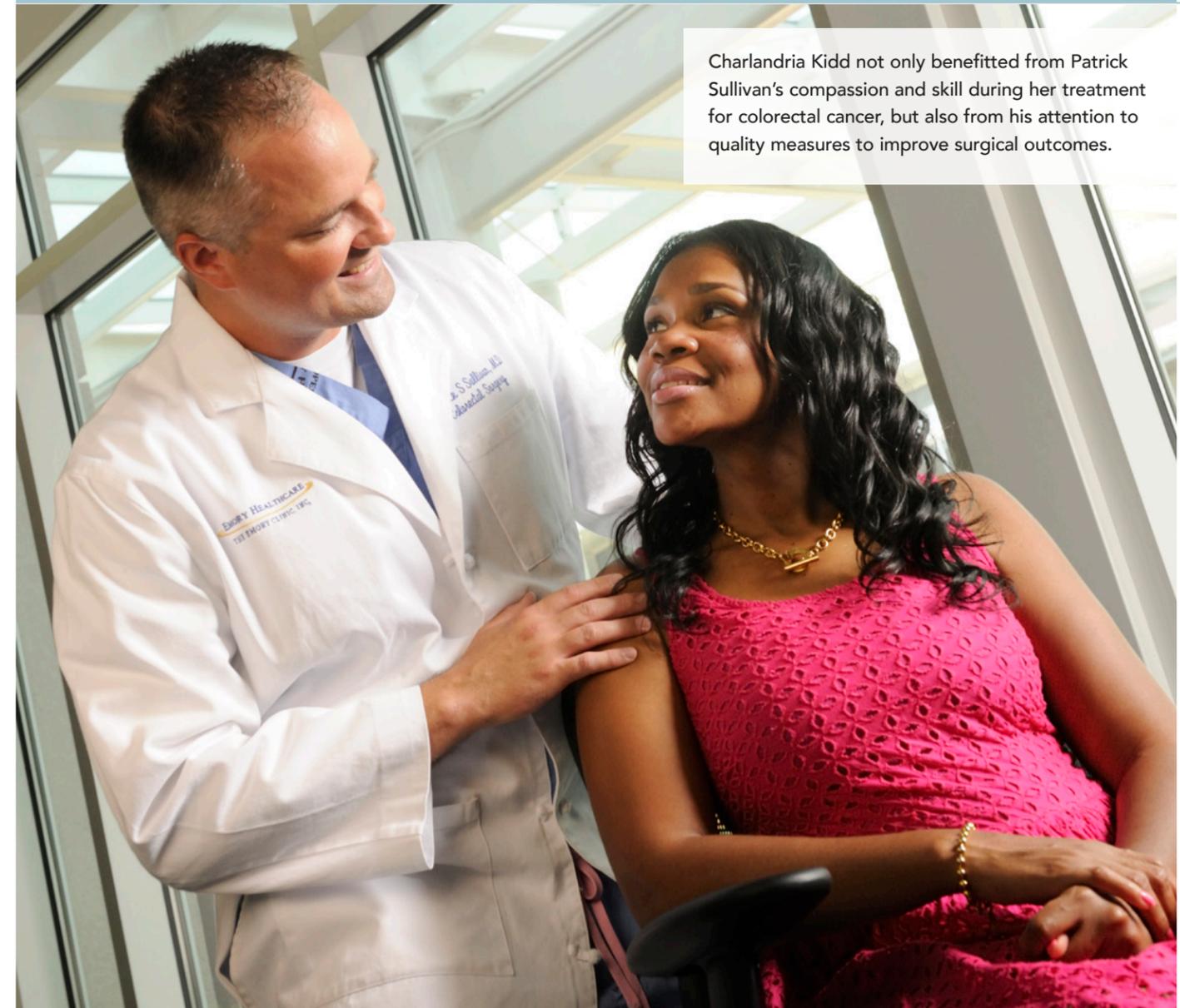
recognize that which is fundamentally good.

At Emory, I have found that most of us share a relentless sense of optimism. Serving the needs of our stakeholders, be they patients, trainees, payers, caregivers, gift donors, or others, is an honor and a privilege, and we welcome each new day and the possibilities it brings to make a difference in their lives and pursuits.

Our reflex is to think of value in terms of quality when it is related to healthcare. Yes, we are passionately committed to improving all facets of the patient experience at Emory, but we also find value in residents who will cherish the lessons they have learned, in faculty whose technical and research skills are activated by humanity, and in breakthroughs and discoveries so significant that they catalyze new thinking, new concepts, and new ways to conquer old problems.

Value is not only a projection of worth; it is a validation of doing great things for the right reasons.

John F. Sweeney, MD
Joseph Brown Whitehead Professor of Surgery and Chair,
Department of Surgery
Emory University School of Medicine



Charlandria Kidd not only benefitted from Patrick Sullivan's compassion and skill during her treatment for colorectal cancer, but also from his attention to quality measures to improve surgical outcomes.

Without Pause

Since arriving at Emory in 2007 from the Baylor College of Medicine, John Sweeney hasn't slowed his course. Barely one year after settling in as chief of the division of general and GI surgery, he became chief quality officer of the Department of Surgery.

He launched the department's participation in such quality alliances as the University HealthSystem Consortium and the National Surgical Quality Improvement Program; enlisted teams from throughout the specialties that developed service-specific quality metrics and checklists, defined improvement areas, and designed strategies to tackle shortfalls; and undertook research collaborations aimed at reducing costs and lessening hospital readmissions.

When Christian Larsen left his position as department chair in 2013 to serve as dean of Emory's School of Medicine, Sweeney was selected as interim chair. This past year, "interim" became "permanent," and no one was surprised.

"John is an individual of personal integrity, professional energy, and commitment to quality leadership who is extremely effective in building teams



After the Convergent procedure is performed by Michael Halkos (center) and David DeLurgio (right), patients typically spend only two nights in the hospital.

through professional development and recruitment of top talent to complement his own leadership skills,” Larsen said. “He brings an exceptional background of surgical innovation and commitment to excellence, quality, and the highest level of patient care.”

DOUBLE TAKE

As the measurement and oversight of outcomes gained traction in the department, John Sweeney and Sebastian Perez, the department’s research informatics specialist, turned their focus towards lowering the cost of pursuing and maintaining those outcomes.

“The future of surgical care promises a resource restricted environment, and payers will not be satisfied with large jumps in cost to sustain better outcomes,” says Perez. “To achieve the balanced relationship between quality and cost that patients deserve, we need to lower the expense of being good at what we do.”

To select the first set of projects for applying value improvement analyses, Perez and his team examined

the costs per patient recorded by the cost-accounting systems of Emory University Hospital and outcomes data from such quality forums as the National Surgical Quality Improvement Program and the Society of Thoracic Surgeons General Thoracic Surgery Database. Perez and Sweeney then designed a standardized process improvement system based on Six Sigma and Lean methodologies, which use structured, collaborative team techniques to create roadmaps for investigation. Project teams were then charged with defining what changes were needed to cut costs or increase patient value and the steps to making those changes.

The gastric bypass OR cost reduction team, led by Edward Lin, set a goal of reducing the average \$12,000 cost of gastric bypass by \$1,200. The OR costs for three surgeons were calculated, and one was found to have significantly lower expenses. After digging deeper, the team traced the reduction to the surgeon’s use of a less expensive stapler. Upon determining that it functioned as well as its costlier cousins, the other two surgeons also began using

the more economical stapler. After one year, the cost of gastric bypass at Emory dropped by a mean of \$2,000.

Patrick Sullivan’s project, ERAS protocol compliance in colorectal surgery, aims for discharging patients sooner after colectomy while also reducing readmissions. ERAS (Enhanced Recovery After Surgery) is a multimodal perioperative care pathway for early patient recovery after major surgery. Sullivan’s team is tracking surgical oncologists’ compliance with such ERAS precepts as less reliance on opioids for pain management and attempting to get patients to walk the first night after surgery. As the surgeons have gradually aligned with ERAS, patient lengths of stay have indeed shortened, though other factors are also involved.

The final challenge will be to sustain such improvements. “Our standardized analytical system should help us with that as well, because one of its components is to create an environment where monitoring is built in,” say Perez.

RIPPLE EFFECT

Johns Creek Hospital joined Emory in 2010. Saint Joseph’s followed suit in 2012. Considering the complex logistics and substantial timeframes that accompany the establishment of Emory’s signature

programs at new outposts, both facilities are relatively young carriers of the Emory brand. However, Emory continues to make major strides in resolving the substantial details and issues associated with growth, and the department is progressively opening new doors at these facilities that will contribute to its goal of setting the standard of care for multiple conditions and diseases in the Southeast and beyond.

HEART AND VASCULAR CONSOLIDATION

The Emory Heart and Vascular Center has expanded from Emory University Hospital (EUH) and Emory University Hospital Midtown (EUHM) to Emory Saint Joseph’s Hospital (ESJH) and Emory Johns Creek Hospital (EJCH). Thoracic and vascular surgery services are in place at EJCH, and cardiac, thoracic, and vascular surgery services have extended to ESJH, one of which is the multidisciplinary Emory Aortic Center, now the largest volume and highest acuity aortic program in Georgia.

The team of cardiothoracic surgeons that moves between these interconnected locations includes Edward Chen, Michael Halkos, Bradley Leshnowar, Manu Sancheti, Eric Sarin, and recent Emory hires Steven Macheers, Jeffrey Miller, and Douglas Murphy, who have long-standing ESJH practices. The team’s unique and overlapping areas of expertise in such areas as aortic disease, robotic surgery, and ventricular assist devices has widened the scope of the Heart and Vascular Center beyond metro Atlanta.

TWO DISCIPLINES, MUTUAL GOAL

An outgrowth of cardiothoracic surgery and cardiology’s increased presence at ESJH is that patients with persistent atrial fibrillation (AF)—cardiac arrhythmia that lasts more than seven days—or long-standing persistent AF—arrhythmia that lasts longer than one year—can now be eligible for the Convergent hybrid AF ablation procedure. Although

intermittent AF can usually be managed with a percutaneous, endocardial approach by electrophysiologists, persistent or long-standing persistent AF is notoriously difficult to treat.

“This hybrid technique offers a minimally invasive alternative to the standard and potentially problematic therapies of medication and surgical or endocardial ablation,” says cardiothoracic surgeon Michael

Halkos, who performs the procedure with electrophysiologist David DeLurgio. “It does not involve chest incisions or a cardiopulmonary bypass. Instead, it strives to restore regular rhythm to the heart by blocking the abnormal electrical signals that trigger and perpetuate AF’s irregular heartbeat, and may yield a more durable option for these patients than conventional therapy.”

The Convergent procedure involves the ablation of areas of the heart that correspond to cardiothoracic surgeons and cardiac electrophysiologists’ different approaches. After Halkos makes a small incision in the abdomen to gain access to the outside of the heart through the diaphragm, he applies radiofrequency ablation to produce lesions (scar tissue) on the heart in order to block the wayward electrical impulses. DeLurgio then enters the inside of the heart through a vein in the leg, uses advanced mapping techniques to make certain that the lesions are complete and connected, and ablates the pulmonary veins and other specific lesion sets.

“We would never have known that a simple thing like the choice of a stapler could make such a difference if we hadn’t compared components of the surgeons’ procedures,” says Sebastian Perez.

“We will be participating in a randomized clinical trial comparing hybrid AF ablation to conventional endocardial ablation for patients with long-standing persistent or persistent AF so that we can test the encouraging short-term results with longer-term follow-up,” says DeLurgio.

WIDENING THE PERIMETER

When Michael Clark, Peter H'Doubler, Charles Lewinstein, Mark Mittenthal, J. Mark Rheudasil, and Joseph Zarge joined our faculty in August 2014, they helped create the largest vascular surgery group in Georgia. In addition to bringing their respected and robust ESJH-based surgical services into Emory's clinical fold, they also contributed a new patient pool from clinics they had established in such outlying communities as Roswell, Cumming, Ellijay, Blairsville, and Blue Ridge.

Within a network of high-end vascular surgical facilities at EUH, ESJH, and EJCH, these doctors have joined with their

Emory colleagues Shipra Arya, Luke Brewster, Tom Dodson, Yazan Duwayri, and Ravi Veeraswamy to further optimize the quality of vascular surgical care Emory provides while increasing its volume of complex cases. Meanwhile, the Emory vascular surgery service at Grady Memorial Hospital, built from the ground up by Ravi Rajani, has solidified its position as downtown Atlanta's go-to outlet for progressive endovascular care.

CANCER TREATMENT AT EMORY JOHNS CREEK HOSPITAL

Winship Cancer Institute has deepened its footprint at EJCH with two newly hired surgical oncologists. Cletus Arciero, a retired and highly decorated Army Colonel, is offering his expertise in treating breast cancer, melanoma, and sarcoma, while Seth Rosen, a 14 year veteran of private practice in Atlanta, has launched the EJCH arm of Emory's colon and rectal surgery program. Rosen will provide care to patients with the full spectrum of colon and rectal conditions, with particular focus on robotic-assisted colectomy and minimally invasive approaches to rectal cancer. Both surgeons will coordinate care with Emory medical and radiation oncologists, oncology nurses, nutritionists, and other oncology providers.



William Jordan comes to Emory with a voluminous and diverse research portfolio.

NEW LEADERSHIP ON THE HORIZON

After serving five-years as chief of the division of vascular surgery and endovascular therapy, Thomas Dodson will return to devoting 100% of his focus to clinical practice in January 2016.

“Back in the day when I was doing my fellowship at Emory, Dr. Dodson was a great model for how an academic surgeon should interact with peers, trainees, and patients,” says William D. Jordan, Jr., who will

become the new vascular surgery chief in January. “It is an honor to take up where he left off, and I welcome working with him and all the other great vascular faculty at Emory.”

Upon completing his vascular surgery fellowship at Emory in 1994, where he also obtained his MD, Jordan returned to the site of his general surgery residency, the University of Alabama at Birmingham. He was appointed chief of vascular surgery at UAB in 1996, program director of the vascular

surgery fellowship in 2002, and the Holt A. McDowell, Jr. Professor and Director of Vascular Surgery and Endovascular Therapy in 2007. His clinical specialties include the minimally invasive treatment of aortic aneurysm, aortic diseases, renal artery conditions, carotid artery diseases, and peripheral vascular diseases.

Jordan's focus on the development, evaluation, and implementation of new methods of treatment for peripheral vascular disease has been fueled by a variety of grants. His most recent trials-based investigations include being National Principal Investigator of Gore & Associates' evaluation of the GORE® conformable TAG® thoracic endoprosthesis for the primary treatment of aneurysm of the descending thoracic aorta, and serving as International Co-PI of a registry that is capturing data on the use and outcomes of Aptus EndoAnchors, which are applied during primary endovascular aneurysm repair to enhance an endograft's inherent fixation and sealing mechanisms.

As he prepares for his move to Atlanta, Jordan has already opened lines of communication with our vascular surgery faculty and been integral to several major discussions involving future directions of the division.



Nathan Klingensmith (left) was one of only nine applicants selected from more than 50 to present at Emory's 2015 Annual Postdoctoral Research Day Symposium.

Expertise Ethic

Developing dexterity in research is not only vital for residents planning to become academic surgeons, but also those intending to focus on clinical practice.

The skills required for conducting basic science and clinical investigations—adept decision-making, multidisciplinary collaboration, in-depth analysis, concise communication of conclusions—are applicable to either career path. Not all of the following residents are guaranteed to spend as much time in the laboratory as they do in the operating room, but their future stakeholders will benefit regardless.

Nathan Klingensmith and John Lyons are doing research sabbaticals in the lab of sepsis and shock investigator Craig Coppersmith. Klingensmith is studying the increased severity of sepsis in patients with a history of chronic alcohol consumption, and Lyons is investigating intestinal degradation during sepsis. Both received highly competitive travel awards to present their respective abstracts at the 38th Annual Conference on Shock, and won first place abstract awards at the 2015 Georgia Society of the American College of Surgeons Annual Meeting.

Rohit Mittal was first author of a paper selected by *Trends in Molecular Medicine* as one of its top ten articles of 2014. Submitted during Mittal's research sabbatical in Coppersmith's lab, the paper described how critical illness can alter and compromise the various components of gut integrity, after which cascading inflammation can transform the gut into a mechanism that fuels sepsis and multiple organ dysfunction.

Lauren Postlewait's receipt of a 2015 Merit Award from the Conquer Cancer Foundation of the American



Keith Delman and surgical PA resident Emily Brock conduct a follow-up examination of patient Brooke Hardy at Winship Cancer Institute's Melanoma Clinic.

Society of Clinical Oncology enabled her to present at the annual ASCO Gastrointestinal Cancers Symposium in San Francisco. Her abstract, co-written with mentor and surgical oncologist Shishir Maithel and others, concluded that the length of the proximal margin is not associated with local recurrence, recurrence-free survival, or overall survival for an abdominal-approach resection of proximal gastric adenocarcinoma.

Blayne Sayed, mentored by transplant immunologist Mandy Ford, and Steven Kim, mentored by transplant surgeon scientist Andrew Adams, won research awards from the American Society of Transplantation (AST) and the American Society of Transplant Surgeons (ASTS). Sayed's AST-funded study is concerned with the increased incidence and severity of rejection following renal and liver transplantation in patients on belatacept-based immunosuppression regimens, while Kim's ASTS scientist scholarship will support a series of non-human primate studies designed to translate tolerance induction strategies involving mesenchymal stromal cells to clinical application.

SWIMMING WITH THE TIDE

Whether it be a sudden trip to the emergency room or a monitoring visit for a chronic condition, the likelihood of a patient's initial and perhaps central clinical contact being a physician assistant is now commonplace. The growing ubiquity of PAs in all fields is influenced by increases in patient volume; current and projected clinician shortages; the need for doctors to carve out more time for research, teaching, or to develop new skills; and PAs being trained to perform many of the tasks that were traditionally considered the province of doctors.

During his surgical residency at Montefiore Medical Center-Albert Einstein College of Medicine, general surgery program director Keith Delman worked extensively with PAs from Montefiore's postgraduate residency for PAs in surgery, one of the oldest programs of its type in the country. Delman pledged to recreate that environment for Emory residents. "As I observed the increasing role of advanced practitioners in the healthcare workforce, I knew that PAs and physicians needed to learn how to work together much sooner," he says.

The only missing piece was a partner from the PA arena. Fortuitously, Margi McKellar was hired in 2013 to be the lead PA and patient coordinator for Winship Cancer Institute's melanoma program, and Delman—who co-chairs Winship's melanoma team—mentioned his aspirations to her. No convincing was required; she was in. "Our overriding concept was to create a class of PAs that were appropriately trained to take on high level management of surgical patients during all phases of their treatment," she says.

The first academic year of the Emory surgical PA residency began in February 2015, and its initiatory residents were Emily Brock from Emory's highly regarded PA program, and Adrienne Jeavons from the PA program at Loma Linda University, CA.

"Dr. Delman was one of the speakers during my clinical year in the PA program," Brock recalls. "He described wanting to provide a side-by-side training program with the MDs to establish a professional relationship between us early on. I was immediately intrigued, particularly since most PAs I spoke to on my rotations said that this was their biggest learning curve once they started working."

Jeavons was attracted to the program by the breadth of medical conditions she would encounter throughout the department's specialties, and by the department's substantial research activity, particularly its collaborations with such organizations as the CDC. "There are so many opportunities to learn at Emory, and to back up what you've learned with more experience," she says. "And with the emphasis on research that's in the air, you are continually exposed to new ideas and

approaches. The education I'm getting will allow me to succeed anywhere."

The one-year surgical PA residency is divided into six months of core rotations that acquaint the residents with general and specialty surgery fields, followed by six months of elective rotations directed towards

personal interests and career goals. The trainees are expected to perform daily rounds; present patients articulately and accurately; describe and implement treatment plans; give educational presentations to physician, PA, and RN staff; perform invasive diagnostic and therapeutic procedures; and become proficient in all surgical aspects of perioperative care.

Rather than focus on specific specialties during their second six months, Brock and Jeavons are gaining as wide a skills base as possible by rotating through the general surgery, vascular, surgical oncology, trauma, and thoracic services and affiliated facilities. When they finish

in January 2016, they believe they will be better able to make informed and sound choices when they apply for PA positions.

"I scrub in, first assist, and observe many different types of surgeries," says Brock. "I've learned different styles, techniques, and instrument preferences, which will allow me to adapt quickly and be a more efficient first assistant to the surgeons I work with."



Visiting liver transplant scholar Miriam Cortes Cerisuelo's activities include investigating normothermic preservation of the liver with Joseph Magliocca.



Chief resident Josh Rosenblum begins patient rounds at Grady Memorial Hospital with PGY3 Sameer Kapadia (left) and PGY1 Elizabeth Wendel (right). Grady is one of the largest public hospitals in the Southeast and a primary rotation for Emory surgery residents.

A DAY IN THE LIFE OF A CHIEF RESIDENT

Josh Rosenblum came to Emory in July 2011 from Case Western Reserve University School of Medicine in Cleveland. During the 2015-2016 academic year, he served as administrative chief. His responsibilities included providing resident-level administrative support and advice to the program director and generating call and rotation schedules for the majority of the residency. He plans to continue at Emory as a fellow in cardiothoracic surgery. The following is his documentation of one clinical shift among many.

04:30 | Out of bed, showered, got dressed. Grady greens today. Coffee to go.

05:15 | On shift. Looked at vitals and labs. No major incidents... yet.

05:30 | Round on the floor with the intern. Woke up patients. Checked everyone for changes and made plans for the day.

06:50 | Morning report from last night's team. Always interesting to see what they've been up to.

07:15 | Ran the patient list with faculty, earlier plans revised. Figured out what trouble the ICU/Consult resident has been stirring up.

07:30 | Started the first case for the day, laparoscopic ventral hernia. Dr. Subramanian running to the second OR, I suspect it's a patient with severe hemorrhoids. Sorry, PGY3.

09:00 | Quick rounds in the ICU with the PGY3 between cases. Some sick patients, some stable, no surprises.

09:30 | Second case, laparoscopic cholecystectomy. Took the PGY3 through the case, always makes me sweat (now I get what attendings go through), but PGY3 gets it done without a hitch.

11:30 | Saw a few consults with the PGY3 after checking in to make sure the intern and, more importantly, all the floor patients are still alive and functioning. Need to find someone to operate on.

12:30 | Lunch at the Grady Cafeteria. Hallelujah for the new Chick-fil-A.

13:30 | Help out with some work on the floor. Tracheostomy changes, dressing changes. Once an intern, always an intern.

15:00 | Work on Morbidity and Mortality Report for the week. We were busy, lots to talk about.

16:30 | GI Tumor Board. Dr. Russell says she has some cases coming up, but I have yet to find them.

18:00 | Expecting that last-minute ER consult, maybe a perforated gastric ulcer, small bowel obstruction, or perirectal abscess. Anything's possible. Round on the floor and ICU, make sure everyone is tucked in for the night.

19:30 | Out the door for home, another busy day tomorrow. Trauma call. Two weeks ago it was 35 admits, five operations, 28 hours in house. Long day, but that's what every surgery resident does, has done for decades, and will do for decades to come.



MOBILE LEARNING

As a clinical fellow in transplantation of the Institute of Liver Studies at King's College London, considered the busiest liver transplant program in Europe, Miriam Cortes Cerisuelo was deeply affected by her experiences with patients struggling with transplant rejection or the acute side effects of traditional immunotherapy regimens. "I learned how important the study of

immunology was firsthand, and I wanted to be part of it," she says.

With the support of Nigel Heaton, one of the founders of King's liver transplant program, and Alberto Sanchez-Fueyo, head of King's Institute of Liver Studies, Cortes Cerisuelo was selected to be the first fellow from King's to come to Emory as a visiting scholar in liver transplant.

"Coming to America and working at Emory was a once in a lifetime opportunity," she says.

She arrived in March 2015 and began working with Mandy Ford, scientific director of the Emory Transplant Center (ETC), and Joseph Magliocca, surgical director of adult and pediatric liver transplantation. She is assisting Dr. Ford with investigations of the role alloreactive Th17 memory cells play in belatacept resistance rejection in liver and kidney transplant recipients—Emory surgeons and scientists helped pioneer belatacept, which is considered to be a less toxic alternative to standard immunosuppressants.

She is also working with Magliocca on a porcine liver transplant model that is testing aspects of organ storage at normal physiologic temperatures. The current method for slowing the metabolism of donor organs is cold storage,

a less than optimal technique for maintaining organs of marginal quality. Magliocca hopes to promote organ storage at normal physiologic temperatures, which could make marginal organs more viable.

When Cortes Cerisuelo returns to King's, she will be an attending in adult and pediatric liver transplant. She plans on maintaining collaborative contact with Ford, Magliocca, and other ETC scientists.



Balance with intent

The department's 2015 research portfolio was a varied mix of foundational, corporate, and federal awards from the Agency for Healthcare Research and Quality, AVON Foundation, Carlos and Marguerite Mason Trust, Georgia Research Alliance, American Heart Association, CDC, FDA, Bill and Melinda Gates Foundation, Department of Defense, and others.

The ability of our faculty to attract funding from a variety of sources has been essential to the department's continued research prominence, though maintaining this position still requires NIH support as well.

Early in the year, the Blue Ridge Institute for Medical Research published its ranking tables online of NIH funding for 2014. Emory Surgery ranked 12th in NIH awards for all departments of surgery nationwide, and narrowly missed being in the top 10 by only \$630,000.

"In a time of more and more people competing for far less money, these rankings portray a department where the long standing luminaries and the next generation of top surgeon-scientists are working together to develop and innovate for the good of patients everywhere," says Craig Coopersmith, the department's vice chair of research and himself a holder of four R01s and a T32 training grant.

PROOF OVER TIME

Vinod Thourani was PI of his first grant when he was an Emory cardiothoracic surgery research fellow in 1998. After joining our faculty in 2005, he began to receive a steady stream of corporate and foundational grants as

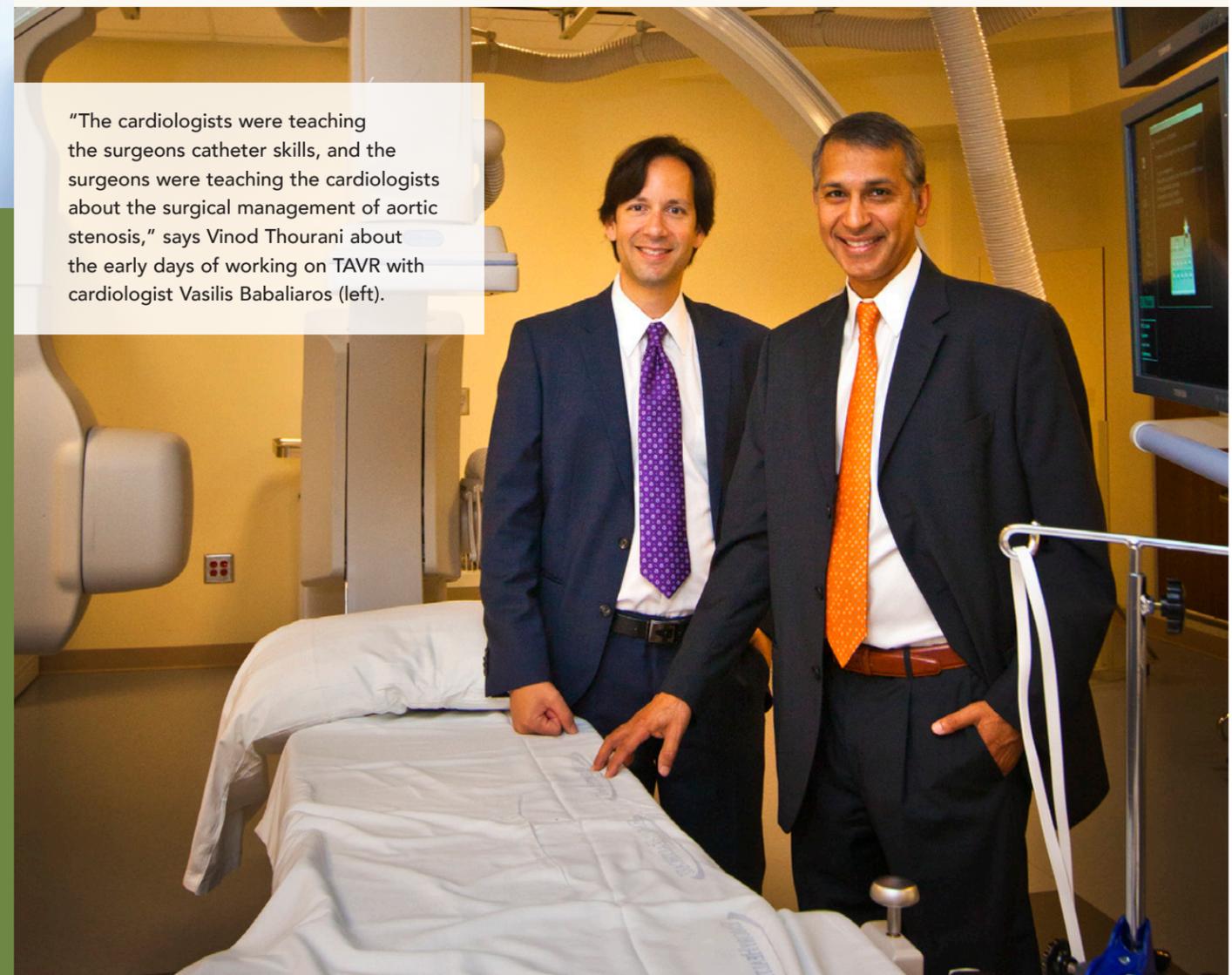
PI and Co-PI. By 2007, he and Robert Guyton, chief of cardiothoracic surgery, and interventional cardiologists Vasilis Babaliaros and Peter Block were Co-PIs of the Emory site of PARTNER 1, a pivotal, multi-center study that tested transcatheter aortic valve replacement (TAVR) with the SAPIEN valve, developed by Edwards Lifesciences. Emory was one of 22 sites nationwide—and the only one in Georgia—in the study.

TAVR was conceived as a less-invasive procedure for high-risk patients with aortic stenosis, a narrowing of the aortic valve that prevents normal blood flow. Traditionally, 20-30 percent of these patients were considered inoperable, while the remainder had to undergo surgical valve replacement, which involves opening the chest and stopping the heart. In TAVR, doctors make a small incision in the groin or chest wall, feed the new valve made of cow heart tissue mounted on a wire mesh on a catheter through the opening, and place the new valve where it is needed.

In one arm of PARTNER 1, all non-operative candidates received TAVR, while in the other, patients considered at high-risk were randomized between surgical valve replacement and TAVR. The reduced mortality among non-operative patients in particular inspired the FDA to approve the SAPIEN valve for this class of patients in 2011. "We concluded that the procedure should be the new standard of care for patients who are unable to undergo traditional surgical therapies," says Thourani.

Fast forward to the 64th Annual Scientific Session of the American College of Cardiology meeting in San Diego, March 2015. Thourani and Babaliaros were part of the team that presented the five year outcomes of both the inoperable and the high-risk patients from the PARTNER 1 trial in a highly anticipated, late breaking clinical trials session. They announced that the data showed that TAVR as an alternative to surgery for these patients resulted in clinical outcomes similar to surgical replacement.

"The cardiologists were teaching the surgeons catheter skills, and the surgeons were teaching the cardiologists about the surgical management of aortic stenosis," says Vinod Thourani about the early days of working on TAVR with cardiologist Vasilis Babaliaros (left).





In their meeting of the minds, Theresa Gillespie's leadership in health services research dovetails seamlessly with Martin Sanda's pursuit of new surgical and non-surgical approaches to cancer care.

"We learned that in high risk patients, the transcatheter aortic valve does not differ from the traditional open surgical valve replacement in terms of mortality," Thourani says. "This was a win for the intervention because we now had long-term data that the function of the new transcatheter valve did not show any deterioration over time."

During the same session, the results of the PARTNER SAPIEN 3 trial in intermediate risk patients were reported, which showed that TAVR can be performed in patients who are less ill than the patients previously studied, with extremely low mortality and complications.

"This was one of the most exciting trials to be performed in the field of aortic valve disease," says Thourani, who was a National Co-PI for the trial. "As one of the top three enrollers for this trial nationally, our team at Emory eagerly provided this lifesaving procedure to a number of our patients in Georgia and throughout the southeast."

Thourani, Babaliaros, and their Emory colleagues also hit a major milestone in March 2015 when they performed their 1000th TAVR procedure at Emory University Hospital.

FIGHTING CANCER ON TWO FRONTS

Increased cancer survivorship has ramped up the development of new technologies for the early detection and targeted therapy that is partially responsible for lower mortality rates. It has also influenced more vigilant oversight, management, and improvement of survivors' quality of life. At Emory, Lily Yang continues to be an innovator in the former field, while Theresa Gillespie is a leading investigator in the latter.

BREAKING CELLULAR ROADBLOCKS

Lily Yang's translational research in novel cancer imaging and targeted therapeutic agents is funded 100% by the NIH. In 2015, her existing projects were joined by a new U01 partnership platform grant from the National Cancer Institute (NCI) Alliance for Nanotechnology in Cancer. The award received the NIH's highest impact score of 10, an uncommon ranking that reflects the review panel's opinion that the proposal could have a sustained influence on the field.

The project is essentially a five-year continuation of her team's 2010-2015 NCI-funded effort to design a magnetic nanoparticle strategy for targeted therapy and treatment monitoring for pancreatic cancer.

"Our primary aim is to devise a targeted, multifunctional nanoparticle platform for overcoming the physical barriers of tumor stroma that obstruct drug delivery in pancreatic cancer so that we can efficiently deliver potent therapeutic agents into tumor cells," says Yang, who is sharing PI status with her long-standing collaborator, Emory radiology and imaging scientist Hui Mao.

Stroma is the connective tissue that supports organs and provides nutrients and regulatory signals to cells, but tumor stroma becomes dense and fibrotic in pancreatic cancer, creating an obstacle to drug delivery and a micro-environment to support the aggressive nature of cancer cells. "The development of a stroma-breaking nanoparticle platform could be a game changer in the treatment of pancreatic cancer as well as other stroma-rich cancers," she says.

Using insights derived from their prior studies, including a more refined understanding of tumor stroma biology and structure and the identification of multimodal, imaging-capable, therapeutic nanoparticles for targeting particular cellular receptors

in cancer and tumor stromal cells, Yang, Mao, surgical oncology division chief Charles Staley, surgical oncologist David Kooby, medical oncologist Bassel El-Rayes, and radiologist Malgorzata Lipowska plan on using the grant to create new and even more powerful nanoparticle drugs for imaging, stromal-penetration, and enhanced targeted delivery of chemotherapy drugs.

INVESTIGATING ISSUES IN SURVIVORSHIP AND CARE

Theresa Gillespie's affinity for clinical, health services, and population-based investigations was formed by direct patient contact during her early years.

"I started my healthcare career in public health as a Peace Corps volunteer and then an oncology nurse, and was continually focused on providing for the basic, essential needs of our patients," she says. "At the time, oncology as a specialty was quite dismal, and clinical research represented a way to pursue potentially better treatments and improved outcomes, and to offer patients hope. In wanting to do that, I noticed that patients in the midst of a cancer diagnosis and therapy often had

difficulty understanding their disease, making decisions about options, and giving truly informed consent. I decided that I wanted to improve patient comprehension and decision-making about their care in addition to bettering their clinical outcomes."

While developing and leading the clinical trials programs at Winship Cancer Institute for 14 years and directing health services research at the Atlanta VA Medical Center for 10, Gillespie established herself as a leader in studies of various components of the patient experience involving multiple cancer types, from novel therapeutic trials to health disparities to decision-making processes to outcomes.

Two of her current projects are focused on patients' quality of life post-treatment and are funded by TrueNTH, a global prostate cancer survivorship research consortium sponsored by an international charitable

organization dedicated to men's health, the Movember Foundation.

For the first undertaking, Gillespie and Emory Urology chair Martin Sanda are Multi-PIs of the Emory site within a network of other cancer centers in the U.S., Canada, Australia, New Zealand, and the UK. The network is charged with enacting

studies that will examine and compare the effectiveness of interventions focused on self-management, social support networks, decision making, physical wellness and nutrition, survivorship care plans and navigation, and sexual recovery after treatment for prostate cancer. Gillespie, Sanda, and their multi-disciplinary team are evaluating strategies for symptom management after prostate cancer treatment, interventions to promote physical activity and optimal nutrition, novel approaches to improve sexual function after surgery and radiation, and the impact of patient navigation on adherence to survivorship care plans.

Gillespie is also the national PI for a TrueNTH randomized trial investigating different approaches to providing social support for prostate cancer patients, partners, and caregivers. Using a web-based portal that is part of TrueNTH's U.S.-based program, participants are enrolled and randomized to one of three interventions: one-on-one support matched with a trained coach-patient with similar stage of disease and treatment received; online support network monitored by a professional; or access to online web resources.

Lily Yang and Hui Mao's Emory team is one of only five programs nationally receiving awards from all three funding phases of the NCI's nanotechnology alliance.



Hui Mao and Lily Yang have collaborated on several nanomedicine projects. In 2015, both received Emory's 1% Award, which recognizes faculty whose NIH proposals have been ranked in the top 1% by NIH reviewers.

"The outcomes measured will include physical function, health-related quality of life, adherence to guideline-concordant care, and costs and cost-effectiveness of interventions," says Gillespie. "The study is available across the entire country, and specifically targets minority, rural, and underserved populations who may not have access to local social support services. Our goal is that the depth and breadth of these research studies involving prostate cancer survivors, their partners, and caregivers will address gaps in cancer care and ultimately enhance patient outcomes for this very common cancer in the U.S. and across the world."

FRAMING A LEGACY

For 13 years, the Annual Department of Surgery Research Day has showcased the basic and clinical science research of our students, postdocs, residents, and fellows. Prior to the abstract call for the 2015 installment, the Research Advisory Committee, which is responsible for planning and managing the program, aptly renamed the event the William C. Wood Research Symposium in honor of a catalyzing figure in the department's research heritage.

Dr. Wood was the fourth Joseph B. Whitehead Chair of the Emory Department of Surgery, and during

his service from 1991-2009, guided its ascendance to new heights of excellence in clinical care, education, and research. When Dr. Wood came to Emory from Massachusetts General Hospital, where he had been directing surgical oncology, the department had no NIH grants. By the time he stepped down from the chair's office, however, the department had begun regularly placing in the upper stratum of academic departments of surgery receiving NIH funding.

In addition to the role his forward thinking, recruitment savvy, and ability to cultivate potential played in this evolution, his own success as an internationally respected contributor to the advancement of cancer therapy—most specifically breast cancer treatment—was an abiding source of inspiration to the department's clinical and basic scientists.

Dr. Wood retired from the Emory Clinic and took his work across the Atlantic in 2011. He became the first academic dean of the Pan-African Academy of Christian Surgeons (PAACS), and oversaw the academic aspects of ten PAACS-sponsored residencies training surgeons in Africa. He also began working towards establishing affordable and sustainable cancer care in Africa's developing countries.

New Faculty



Breast cancer surgeon **CLETUS ARCIERO, MD**, served as program director of the general surgery residency and chief of both general surgery and surgical oncology at Dwight D. Eisenhower Army Medical Center in Fort Gordon. During his 25-years of service in the United States Army, he received such medals as the Legion of Merit. He recently retired as a Colonel.



I. RAUL BADELL, MD, did his general surgery residency, abdominal organ transplantation fellowship, and research fellowship in transplant immunology at Emory. His clinical practice consists primarily of kidney-pancreas transplantation. His research interests involve immunology and optimizing the use of belatacept in kidney transplant recipients.



Prior to Emory, **WENDY GREENE, MD**, was associate director of trauma and surgical critical care at Howard University Hospital. She is now the director of the Acute and Critical Care Surgery Service of Emory University Hospital and an attending in the hospital's Surgical Intensive Care Unit.



After completing his Emory abdominal transplantation fellowship, **RAYMOND LYNCH, MD**, joined the University of Kansas Medical Center. In 2014, he was awarded the American Society of Transplant Surgeons Vanguard Prize for his studies of accommodation after renal transplantation. He specializes in adult and pediatric liver and kidney transplantation and hepatopancreatobiliary malignancies.



SHARON MURET-WAGSTAFF, PHD, MPA, is involved with establishing an interdisciplinary leadership group to coordinate team training activities at both Emory University and Grady Memorial hospitals. She is also a member of the advisory board of the Carlos and Davis Center for Surgical Anatomy and Technique. Before Emory, she was vice chair of faculty development and innovation for the Department of Anesthesia, Critical Care and Pain Medicine, Beth Israel Deaconess Medical Center.



SHEETHAL REDDY, PHD, is a psychologist for the Strong4Life Program of Children's Healthcare of Atlanta, which evaluates and treats childhood obesity through a multi-specialty and evidence-based approach. As the first psychologist to be hired by the Department of Surgery, she will collaborate

on clinical and research projects with pediatric surgery chief Mark Wulkan and other Emory pediatric surgeons.



While at Atlanta Colon & Rectal Surgery, **SETH ROSEN, MD**, initiated several new procedures at Wellstar Cobb and Emory Johns Creek hospitals, including the procedure for prolapsing hemorrhoids (PPH), Doppler-assisted hemorrhoid artery ligation, transanal endoscopic microsurgery, and stapled transanal resection of the rectum, which he was the first surgeon to perform in Georgia.



NEIL SAUNDERS, MD, completed his general surgery residency at Emory, followed by a complex general surgical oncology fellowship at Ohio State University. His clinical specialties are robotic surgery, endocrine surgery, and malignancies of the thyroid, adrenal, and parathyroid glands. His primary research interests are thyroid cancer, surgical outcomes, and quality improvement.



SUBHADRA SHASHIDHARAN, MD, received her medical degree from the Bangalore Medical College of Bangalore, India. She did her general surgery residency at St. Agnes Hospital, Baltimore, and fellowships in cardiothoracic surgery and congenital cardiac surgery at the University of Southern California. She is primarily based at Children's Healthcare of Atlanta at Egleston and Scottish Rite hospitals.



JAMIL STETLER, MD, was raised in Atlanta. After obtaining his MD at Wake Forest University School of Medicine, he returned to his hometown and did his general surgery residency and minimally invasive surgery fellowship at Emory. During his fellowship, he was mentored by Edward Lin, Scott Davis, and Ankit Patel, whom he has now joined as a member of the surgical weight-loss team of the Emory Bariatric Center.



PREETI SUBHEDDAR, MD, received her MD from Marshall University. She completed her general surgery residency at Emory and a breast fellowship at Memorial Sloan Kettering Cancer Center. Her clinical specialty is treating patients with breast disease, while her research pursuits include investigating healthcare disparities in breast cancer treatment and developing treatment methods tailored to breast cancer molecular subtypes.

Faculty appointments & awards

Shelly Abramowicz, DMD, MPH

- Site Visitor, Oral and Maxillofacial Surgery Programs, Commission on Dental Accreditation

Andrew Adams, MD, PhD

- Scientific Review Committee, Transplantation and Immunology Research Network, American Society of Transplantation
- Editorial Board, American Journal of Transplantation

Mazin Al Salihi, MD, PhD

- Editorial Board, Archives of Surgical Oncology

Bahaaldin Alsoufi, MD

- Congenital Program Committee, Western Thoracic Surgical Association

Shipra Arya, MD, SM

- NCRP Winter 2015 Mentored Clinical and Population Research Award, American Heart Association

Gary Bouloux, DDS, MD, MDSc

- Special Committee on Parameters of Care, American Association of Oral and Maxillofacial Surgeons

Luke Brewster, MD, PhD, MA

- 1% Club, Emory University School of Medicine
- Grants and Scholarship Committee, Vascular and Endovascular Surgery Society

Kenneth Cardona, MD

- Trans-Atlantic Retroperitoneal Sarcoma Working Group

Grant Carlson, MD

- 2015 Excellence in Patient Satisfaction Award, The Emory Clinic

Edward Chen, MD

- Chair, 2016 Adult Cardiac Skills Course, American Association for Thoracic Surgery

- Thoracic Aortic Component Development Task Force, Society of Thoracic Surgeons National Database

Matthew Clifton, MD

- Continuing Medical Education Task Force Committee, International Pediatric Endosurgery Group

Craig Coopersmith, MD

- President, Society of Critical Care Medicine
- Center for Scientific Review, NIH
- Editorial Board, Journal of Immunology

Keith Delman, MD

- Executive Committee, Association of Program Directors in Surgery
- Vice Chair for Research and Assessment, ACS/APDS/ASE Entering Surgery Resident Prep Curriculum Committee
- 2015 Excellence in Patient Satisfaction Award, The Emory Clinic

Felix Fernandez, MD

- Richard E. Clark Paper in General Thoracic Surgery, Society of Thoracic Surgeons 51st Annual Meeting

Seth Force, MD

- Editorial Boards: Annals of Thoracic Surgery, Journal of Visualized Surgery

Mandy Ford, PhD

- Transplantation and Immunology Research Network Organizing Committee, American Society of Transplantation
- Section Editor, Mechanisms of Rejection, Current Opinions in Transplantation

Rondi Gelbard, MD

- 2015-2016 Surgical Education Research Fellowship (SERF), Association for Surgical Education

Theresa Gillespie, PhD

- U.S. Delegate, Practical and

- Social Support for Prostate Survivorship Committee, Movember Foundation

Robert Guyton, MD

- Treasurer, American College of Cardiology

David Kooby, MD

- Fellow, 2015 Woodruff Leadership Academy
- Co-Director, International Consensus Conference on Minimally Invasive Pancreatic Resection, 12th World Congress of the International Hepato-Pancreato-Biliary Association

Bradley Leshnowar, MD

- Young Leadership Committee, Council on Cardiovascular Surgery and Anesthesia, American Heart Association

Albert Losken, MD

- Plastic Surgery Foundation Visiting Professor

Joseph Magliocca, MD

- Associate Editor, American Journal of Transplantation

Shishir Maithel, MD

- Vice-Chair, Program Committee, Americas Hepato-Pancreato-Biliary Association

Kevin McConnell, MD

- Editorial board, SHOCK
- Shock Society: Chair, Animal Studies Committee; Co-Chair, Mentorship Committee

Foad Nahai, MD

- 2015 Career Achievement Award, Aesthetic Surgery Education and Research Foundation

Steven Roser, DMD, MD

- Board of Directors, American Academy of Craniomaxillofacial Surgeons

Eric Sarin, MD

- Workforce on Health Policy, Reform, and Advocacy, Society of Thoracic Surgeons

Virginia Shaffer, MD

- Ad Hoc Member & Reviewer, Scientific Forum Committee, American College of Surgeons

Muralidhar Padala, PhD

- William W. Parmley Young Author Achievement Award, Journal of the American College of Cardiology

- American Heart Association: Young Leadership Committee, Cardiovascular Surgery and Anesthesia Council; Surgery Basic Science Study Section

Rachel Patzer, PhD, MPH

- Expert Panel Member, "Designing a Health Care Shared Savings Plan," Parkland Center for Clinical Innovation

Barbara Pettitt, MD

- Board of Directors, ASE Representative to ACS Board of Governors, Association for Surgical Education

Jonathan Pollock, MD

- Best Paper Award, Surgical Society of Ethiopia Scientific Conference

Ravi Rajani, MD

- Editorial Board, Annals of Vascular Surgery
- Institutional Representative, Emory Department of Surgery, Association for Academic Surgery

Mehul Raval, MD, MS

- National Cancer Data Base (NCDB) Pediatric Research Group, American College of Surgeons

Monica Rizzo, MD

- Co-Chair, Disparities Committee, Society of Surgical Oncology

Steven Roser, DMD, MD

- Board of Directors, American Academy of Craniomaxillofacial Surgeons

Eric Sarin, MD

- Workforce on Health Policy, Reform, and Advocacy, Society of Thoracic Surgeons

Virginia Shaffer, MD

- Ad Hoc Member & Reviewer, Scientific Forum Committee, American College of Surgeons

Jyotirmay Sharma, MD

- Collaborative Endocrine Surgery Quality Improvement Project (CESQIP) Committee, American Association of Endocrine Surgeons

- Underserved Populations Committee, American Association of Clinical Endocrinologists

Arvinpal Singh, MD

- Editorial Board, Bariatric Surgical Practice and Patient Care

Jahnvi Srinivasan, MD

- Dean's Teaching Award, Emory University School of Medicine

Charles Staley, MD

- President, Georgia Surgical Society

Patrick Sullivan, MD

- ColoRectal Education Systems Template (CREST) Committee, American Society of Colon and Rectal Surgery

Nicole Turgeon, MD

- Fellow, 2015 Woodruff Leadership Academy
- Chair, Kidney Paired Exchange Program, Kidney Transplantation Committee, OPTN/UNOS

- Associate Medical Director, LifeLink of Georgia

Ravi Veeraswamy, MD

- President, South Asian American Vascular Surgery

Lily Yang, MD, PhD

- Coordination and Governance Committee, National Cancer Institute Alliance for Nanotechnology in Cancer



LONGEVITY

The following Department of Surgery faculty and staff have honored Emory Medicine with 25 or more years of service. Their loyalty and commitment to Emory's patient care, discovery, and education enterprise is a humbling reminder that the strength and durability of an organization begins with the quality of its people.

PICTURED, L TO R:

BARBARA PETTITT, MD,
Professor of Surgery

JEAN YOUNGBLOOD,
APRN, FNP, MSN-RN,
Nurse Practitioner, Oral
and Maxillofacial Surgery

TINA MCELDERRY,
PA, Vascular Surgery

GINA WHITE,
Senior Research Project
Coordinator, Surgery

KAREN WYATT, Administrative
Assistant, Transplant

THERESA GILLESPIE, PhD,
MA, Professor of Surgery

SUE MEAD, RN, Acute Care
Research Nurse II, Transplant

BRENDA ZACHERY,
Administrative Assistant,
Transplant

NOT PICTURED:
CONNIE ARMOUR, RN,
Oral and Maxillofacial Surgery

GERALDINE BIVENS,
Senior Medical Secretary,
Cardiothoracic Surgery

LAURA BRANTLEY, Patient
Services Coordinator II, General
and GI Surgery

CHRISTINE BUCKNOR,
Patient Services Coordinator II,
Cardiothoracic Surgery

KEITH CAUSEY, PA, Chief PA,
Cardiothoracic Surgery

GLORIA COLLEY,
Administrative Assistant,
General and GI Surgery

BARBARA CRANKFIELD,
Patient Services Coordinator II,
Surgical Oncology

THOMAS DODSON, MD,
Professor of Surgery

ROBERT GUYTON, MD,
Distinguished Charles Ross
Hatcher, Jr., Professor of Surgery

ANNETTE HADLEY, Senior
Research Specialist, General and
GI Surgery

BRAD HARTEN, Manager,
Research Lab, Transplant

ANDREA HESTLEY, Medical
Secretary, Surgical Oncology

KIRK KANTER, MD,
Professor of Surgery

GRISELDA MCCORQUODALE,
Senior Research Project
Coordinator, Transplant

NANCY REYNICS, RNC, FNP

CICELY ROSS, NP-C,
Thoracic Surgery

TONCRED STYBLO, MD,
Associate Professor of Surgery

VERTIS WALKER, Senior
Administrative Manager, Surgery

KELLIE WILLIAMS, NP-C,
Cardiothoracic Surgery

REBECCA WILLIAMS,
Nurse Manager, Oral and
Maxillofacial Surgery



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