



DEPARTMENT OF SURGERY | ANNUAL REPORT 2014

Driven



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On the cover

As site investigators at Grady Memorial Hospital's trauma center for the multi-center Surgical Critical Care Initiative (see page 13), Emory trauma and surgical critical care surgeons **Bryan Morse** and **Rondi Gelbard** collect various types of objective clinical data from trauma patients that have given informed consent. These include blood and tissue samples for mechanistic assays, physiological data, and radiology and surgical procedures and outcomes data.



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Department of Surgery

FROM THE CHAIR



For outstanding skill sets to have the potential to enact long-lasting effects, there is one essential ingredient: passion. If the belief that we have to do what we do best is absent, talent and dexterity become mere components of technique, and great technique exercised with no higher

purpose is incapable of becoming a force of change.

One of the primary take-aways from the following pages is that none of the principal players would be where they are today without an abiding determination that will not be deterred. They are tenacious. They will go the distance.

All of us at the Department of Surgery share this spirit, and are connected by our dedication to the purity of creating a place where any patient can come at any time to receive the best treatment possible. Be they small triumphs or major leaps; whether they emanate from the lab, OR, or classroom; be they the product of teamwork or individual incentive; each act that moves us closer to this ideal is important, worthy of thanks, and energized by passion.

John F. Sweeney, MD

W. Dean Warren Distinguished Professor of Surgery and
Interim Chair, Department of Surgery
Emory University School of Medicine

...to inspire trust



Left to right: **Cheryl Hiddleson, Timothy Buchman, and Terry Willey** at a monitoring station in the eICU. As director of business strategy for Emory Healthcare IS, Willey managed the installation of the network's specialized IT systems into Emory's hospitals.

CRITICAL CARE NETWORK READY FOR CURRENT REALITIES AND FUTURE NEEDS

The patient was turning blue. Heart rate 40, blood pressure 50, oxygen saturation 60. Lung dysfunction kicked in with a decline in vital signs.

The ICU on-call physician was 15 minutes out. Miles away, an RN at the Emory Electronic ICU (eICU) detected the deterioration. She alerted the on-service eICU physician, who watched the patient's vital signs, ordered medications, reviewed lab data, and guided the critical care medicine nurse practitioner at the patient's bedside through advanced resuscitation techniques via high definition audiovisual tools. The patient stabilized.

Located in the Doctor's Center Building at Emory Saint Joseph's Hospital (ESJH), the Emory eICU is linked to ICUs at ESJH, Emory University Hospital (EUH), EUH Midtown, and East Georgia Regional Medical Center by HIPAA-secure, bi-directional AV technology and digital connections that carry encrypted medical data. Emory Johns Creek Hospital will join soon.

Funded by a Health Care Innovations Award (HCIA) from the Centers for Medicare and Medicaid Services, the eICU was initiated by Timothy Buchman, Emory Critical Care Center (ECCC) director, to expand access to critical care services, lower costs, and address the looming national shortage of critical care physicians.

Telemedicine provider Philips Healthcare installed cameras, monitors, microphones, and speakers in the participant ICUs as well as vital sign, patient monitoring, flowsheet, and lab interfaces and servers for data streams and storage. All hardware/software derived patient data from the ICUs routes to the eICU and its 24-7 monitoring personnel, who work closely with providers in the member ICUs as they treat patients.

“Now our ICU nurses have a second pair of eyes watching their patients,” says critical care nurse Cheryl Hiddleston, operations director of the eICU. “When other physicians have gone home for the day, we have an ICU physician available at the push of a button.”

The HCIA grant also provides support for two residencies in the ECCC. A one-year critical care residency is recruiting, training, and deploying NPs and PAs throughout the Emory system. A six-month HCIA residency provides critical care training for providers in other fields from hospitals in Georgia’s underserved communities. When certified, the PAs and NPs return to their hospitals, which will improve access to community ICU healthcare across the state and eventually serve thousands of Medicare and Medicaid beneficiaries.

“The next phase will be adding the emergency departments at EUH and Midtown,” Buchman says. “Patients requiring critical care will be tracked as soon as they enter the Emory system, further widening the range and scope of the data needed to make informed decisions.”

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SHORTER WAITS, INCREASED ACCESS

As of March 2014, the Emory Transplant Center’s paired donor kidney exchange program successfully matched and transplanted 100% of the donor/recipient pairs enrolled in the National Kidney Registry (NKR), a nonprofit organization that facilitates more living donor exchange transplants than any other exchange program in the world. Emory tied with Johns Hopkins, though Johns Hopkins has been working with NKR less than a year. Emory joined the program in 2012 and has transplanted more patients.

In paired kidney donation exchange, people can donate a kidney to a friend or loved one despite incompatible blood matches. The process involves a donor and recipient being matched with another incompatible pair, and the kidneys being exchanged between them. Emory’s membership in the NKR has considerably widened its donor-recipient pool to encompass the nation and allows participation in swaps or “chains” that involve multiple patients and transplant programs across the U.S.

Emory’s perfect score means that no Emory patient has had to wait more than six months for a match. A quick and accurate match benefits

transplant outcomes, extends kidney and patient survival rates, and can improve the recipient’s quality of life.

“We could not do this without patients who are willing to participate in the NKR, combined with a skilled and dedicated team that includes our transplant nephrology colleagues, coordinators, managers, physicians, and leaders,” says Nicole Turgeon, surgical director of the program.

ALWAYS IN SIGHT

Studies show that approximately 40 percent of congenital heart disease (CHD) patients in Canada and Europe stop seeing heart specialists between the ages of 13 and 21.



20-year-old **Cindy Skrine** (left) donated her kidney to a recipient in California so her mother, also named **Cindy Skrine** (right), could receive a new kidney through Emory’s paired donor kidney exchange program.



“Even if their defects are treated surgically in childhood, many CHD patients will require additional surgery as adults to keep their hearts functioning correctly,” says **Brian Kogon**. “If they are not being consistently monitored, these patients may not make the connection between the symptoms they develop as adults and their CHD—especially if it was successfully corrected in childhood.”

Experts suspect similar stats exist in the U.S. Despite guidelines that recommend lifelong care and observation, CHD patients can wrongly assume that receding symptoms indicate dissipating conditions.

In response to this troubling trend, Children’s Healthcare of Atlanta (CHOA) and Emory Healthcare launched the Congenital Heart Center of Georgia (CHCG), one of the largest programs of its type in the nation and the first in Georgia. Under CHCG’s banner, CHOA’s cardiac team collaborates with Emory’s adult congenital heart specialists to provide seamless care from before birth through adulthood for CHD patients. CHCG also educates patients about the necessity of consistent monitoring and sustained care.

“The left hand will know what the right hand is doing and we won’t lose track of people,” says Brian Kogon, co-director of CHCG and surgical director of Emory’s Adult Congenital Heart Center (ACHC). “At all stages of a patient’s condition, we will be able to offer the latest treatments and access to progressive clinical trials.” Kogon’s fellow CHCG co-directors are cardiologist Wendy Book, medical director of the ACHC, and Robert Campbell, chief of cardiac services at CHOA.

SHARING THE DRIVE TO HEALTH

Meagan Moyer, dietitian, Emory Bariatric Center: “It’s amazing to see people walk into the clinic when they used to need a wheelchair. It’s not just a cosmetic weight loss, but an overall improvement in their health.”

Jim Blackburn, Emory Bariatric Center gastric bypass patient: “They’re with you before the surgery and after. Having access to support groups and dietitians is a huge benefit.”

Obesity contributes to increased risk of type II diabetes, hypertension, cardiovascular disease, cancer and musculoskeletal disorders, and other health risks. The Emory Bariatric Center’s clinical model is based on the knowledge that a condition capable of generating multiple afflictions requires versatile treatment choices tailored to individual needs.

“We were one of the first centers in the Southeast to offer both surgical and non-surgical weight loss options,” says Melinda Kane, the center’s business manager. “Our interdisciplinary approach involves in-depth medical care, education, behavior modification, psychological counseling, and support forums before, during, and after weight management interventions. Once someone becomes our

patient, they become lifetime partners with us on a path to better health.”

Originally split between the Emory Clinic on Clifton Road and EUH Midtown, the center has combined all services at its renovated Midtown location. “The increased case volume and productivity surpassed our expectations,” says Edward Lin, surgical director of the center. “Patient satisfaction has notched up because everything is here: support groups, office visits, wellness coaching, pre-op admissions. If I’m meeting with a post-op patient who is concerned about their diet, I can walk down the hall, find a dietitian, and we can both talk to them.”

Following the consolidation, the Bariatric Surgery Center Network of the American College of Surgeons (ACS BSCN) granted the center its third Level 1 accreditation. This gold standard for weight loss programs demands periodic and rigorous oversight of outcomes, pathways, and protocols.

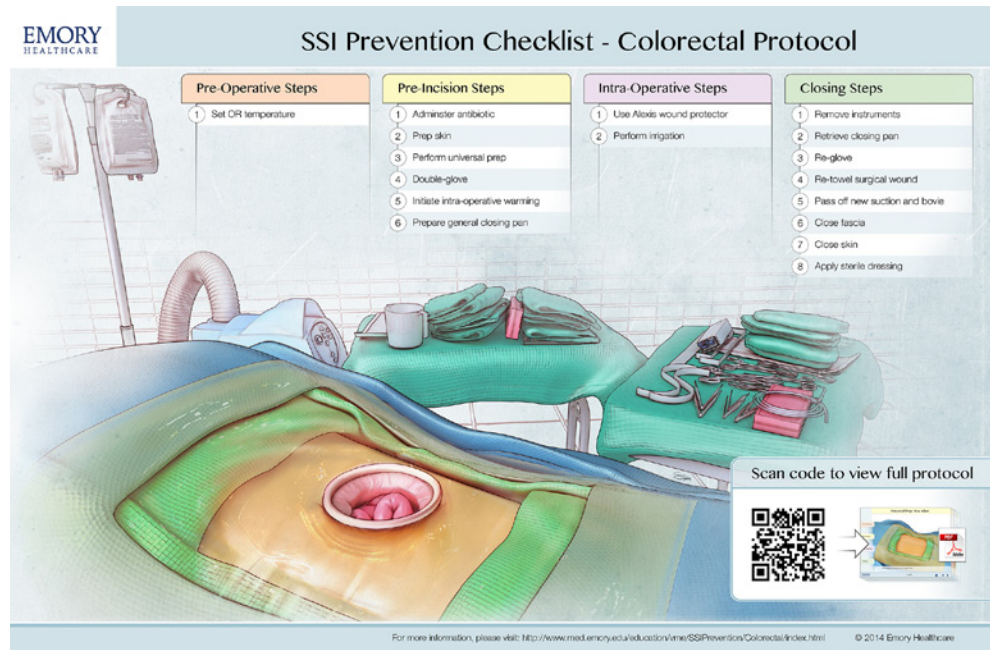
In 2014, ACS BSCN and the American Society for Metabolic and Bariatric Surgery (ASMBS) unified their respective accreditation programs as the Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program (MBSAQIP). The Emory Bariatric Center’s fourth accreditation site visit for MBSAQIP will be in November 2016.

EDUCATING BOTH SIDES OF THE SURGICAL CONTRACT

“Surgical site infections are one of the more common healthcare associated infections,” says Joe Sharma, chair of Emory’s Wound Infection Group (WIG). “The group includes general surgeons and acute care, surgical oncology, colorectal, vascular, plastics, and urology surgeons; anesthesiologists; infectious disease and infection control specialists; preoperative and floor nurses; coders; administrative coordinators; medical students; a CDC liaison; and residents. We have a vested interest in insuring that patients’ original problems are not augmented by others from our own institution.”

WIG collects outcomes data and feeds it into the National Surgical Quality Improvement Program (NSQIP) database, which then quantifies 30-day risk-adjusted surgical outcomes from this and other submitted data and reports the results back to its member hospitals. By extracting areas needing improvement and implementing associated initiatives, WIG has lowered the incidence of surgical site infections at Emory hospitals.

Communicating with both the treated and those who treat has been key to this success. In April, WIG launched the



The Colorectal Surgery Checklist features digital renderings by Department of Surgery medical illustrator **Satyen Tripathi** and text by general surgeon **Patrick Sullivan** and OR nurse **Cheryl Castleberry**.

Colorectal Surgery Checklist for clinicians and their teams. This diagrammatic, step-by-step protocol delineates the pre-operative, pre-incision, intra-operative, and closing stages that contribute to effective wound closure for colorectal surgery. The checklist has been reproduced as a printed poster in various ORs and online as an interactive PDF. Future plans include revising the format for other types of surgery.

WIG has also launched “Come Clean: Stop Surgical Infections Before They Start,” an iPad app for patients. “To empower patients to be their own champions, the app educates them about wound care and how to reduce their risks for SSIs,” says Sharma. “It describes such measures as proper hygiene procedures, eliminating smoking, and controlling blood sugar prior to surgery.”



“**Jack**” Culbertson (center) performed many oncoplastic breast conserving procedures with surgical oncologist **Monica Rizzo** (right). They are shown here with former plastic surgery resident **Wright Jones**. “Jack was a fabulous colleague and a great friend,” says Rizzo. “His work continues to live on in many of the patients we treated together.”

COMMITTED TO HEALING, TEACHING, AND LIVING



Impossible? Not to John “Jack” Culbertson (left), who often took on reconstructive procedures for patients with disfigurements that seemingly had no solution, particularly in children.

“Jack was always willing to handle the really difficult problems that others considered irreparable. That was his legacy,” says Emory plastic surgery chief Grant Carlson.

Culbertson loved teaching and was a genial and unpretentious mentor to hundreds of plastic surgery residents. “He insisted that we call him Jack,” says former Emory resident Michael Golinko. “I’ve never met a faculty member with as humble, dedicated, and pure a spirit of joy and curiosity. He had a vast knowledge of subjects both inside and outside surgery. During an operation, he could effortlessly connect the subtleties of ear reconstruction with work he did in Africa.”

Culbertson joined the Emory faculty in 1986 and served as chief of plastic surgery at both EUH

Midtown and Grady Memorial Hospital. Amidst his clinical and teaching duties, he traveled to Shiprock Northern Navajo Medical Center, New Mexico, three times a year, seeing patients and performing surgery. He was a member of multiple national societies, contributed to numerous publications and textbooks, and lectured nationally and internationally.

All of this came to a tragic end when Culbertson’s single engine plane appeared to lose power and crashed in North Georgia on December 2, 2013. He was killed in the accident. The National Transportation Safety Board has yet to release a definitive report on the cause.

Culbertson cherished his Piper PA-46. He logged hundreds of hours flying to such destinations as Maine or Colorado to ski, hike, or fish. In fact, he and four passengers had survived an accident in 2000 when the plane experienced engine failure over Arkansas and Culbertson hard-landed it in a field.

“We are fortunate to have had people like Jack in the world,” says Carlson. “He always reminded us that life is special and should be treated as such.”

Culbertson was survived by his wife, Elizabeth; two sons; one daughter; his mother; and two sisters.

...to cross boundaries

Chief resident **Snehal Patel** leads a small group training session in the department's simulation lab.

EXERCISING CONVICTION IN ETHIOPIA

As the country strains under the weight of multiple healthcare crises, from widespread poverty, malnutrition, and disease to high infant and maternal mortality, Ethiopia's shortage of trained doctors is a compounding factor. Soddo Christian

Hospital—located in its namesake city in the country's densely populated Wolaitta region—is actively battling this deficit by training Ethiopian surgeons. The hospital sponsors a five year surgical residency with the Pan African Academy of Christian Surgeons (PAACS) that assists graduates with placement in hospitals that care for underserved and vulnerable populations.

The hospital is also the site of the Emory Global Surgery Program, one of the first American Board of Surgery-

approved international surgical training experiences. Emory general surgeon Jonathan Pollock, the program's director, has been living and working in Soddo and laying the groundwork for the rotation since 2011. He also leads the PAACS training programs at both Soddo and the Myungsung Christian Medical Center in Addis Ababa, Ethiopia's capital.

"This is an ideal outpost for experiencing the rigor and achievement of international service," says Pollock, who welcomed Soddo's first Emory residents during the 2013-2014 academic year. "The size of the caseload and the limits of our technology are a great equalizer. There is no room for ego, and Emory residents will quickly learn that the exchange of knowledge will go both ways with their Ethiopian counterparts, whose support is essential to our work."

PGY5 Benjamin Martin arrived at Soddo in the fall. Despite having done two Emory Medishare surgical trips to Haiti, he was initially challenged by the hospital's limited resources. "There are no CTs, no MRIs," he says. "Many surgeries were truly exploratory. I became acutely aware of my limitations when I realized the patient couldn't go intubated to the ICU because there was no ICU and no ventilator. This could be exasperating, but usually the barriers could be creatively circumvented. The payoff was very rewarding."

Martin cherished the interactions he had with the patients, OR staff, and the Ethiopian surgery residents. "Each morning the Ethiopian residents and I drank coffee

TRADING TALENT: EMORY AND KING'S COLLEGE

The transplantation program at King's College Hospital (KCH) in London is similar in reputation to the Emory Transplant Center (ETC). In 2013, the Emory general surgery residency and King's began phasing in a resident exchange partnership that could provide formative experiences for future academic surgeons while benefitting the clinical and research pursuits of both transplant programs.

Emory resident Stuart Hurst is continuing his two-year transplant immunology research sabbatical with Professor Steven Sacks, director of the Medical Research Council Centre for Transplantation at King's, and Professor Tony Dorling, the Centre's deputy director. Meanwhile, Emory



Soddo Hospital sits at the center of the Wolaitta region, which has about 2.5 million inhabitants. Over 90% of the population are rural dwellers.



Soddo Ethiopian residents **Surafel Mulatu, Segni Bekele, and Efeson Thomas** with **Benjamin Martin**.

after rounds. Surgery is a universal language, and it was a gateway to learning more about each other and sharing our cultures."

PGY5 Denis Foretia was well aware that Ethiopia's healthcare challenges mirrored those in his native Cameroon, where he has created a non-profit foundation to address his country's healthcare and other socioeconomic needs. "It was very inspiring to be part of the day-to-day operation of an indigenous training program that is working to build a self-sustaining and clinically robust healthcare delivery system," he says as he describes his Soddo rotation in the spring. "Seeing how it worked proved that it is possible to assemble and train the requisite workforce needed to staff African hospitals."

PGY4 Blayne Amir Sayed has begun his year of liver transplant and hepatobiliary clinical training with mentor Professor Nigel Heaton, one of the founders of KCH's liver transplant program. He is also doing research with Professor Alberto Sanchez-Fueyo, acclaimed hepatologist and head of King's College Institute of Liver Sciences.

"As the busiest liver transplant program in Europe, over 220 liver transplants were performed at KCH last year. They also have a robust hepatobiliary program," says Sayed. "King's was the first center in the UK to perform living related liver transplantation, has been on the forefront of regularly utilizing ex vivo split liver transplantation, and is currently developing normothermic perfusion techniques.

They have a strong reputation for training surgical fellows, so the operative opportunities here are exceptional. The Liver Sciences Institute is also very active, and is currently enrolling patients for one of the first clinical trials using regulatory T cells to induce tolerance in liver transplant recipients.”

During a typical week, Sayed assists Heaton or one of seven other consultant surgeons on liver transplants and major hepatobiliary procedures. He also works in Sanchez-Fueyo’s lab investigating the development of tolerance following liver transplantation. “The goal is to connect Professor Sanchez-Fueyo’s research on the acquisition of operational tolerance in liver transplant recipients to Dr. Mandy Ford’s studies at the ETC of epigenetic regulation of T cell costimulatory molecules. Hopefully, this will help solidify a long-term King’s and Emory collaboration.”

Miriam Cortes, the first fellow of King’s MRC Centre for Transplantation to come to Emory, is working in transplantation immunology investigator Neal Iwakoshi’s lab. She is assisting on studies of how the expression of complement regulators/receptors on hepatic endothelium may account for differences in resistance to complement mediated injury during humoral rejection following liver transplantation.

AN EVOLVING PROCESS

As the methods and merits of minimally invasive surgery were scrutinized and debated in the early 1990s, the Emory Department of Surgery moved ahead with adopting the relatively new discipline. The Emory Endosurgery Unit established one of the first endosurgery fellowships in the country; minimally invasive simulation training was evaluated and advocated; and laparoscopic, endoscopic, and thoracoscopic procedures became surgical options for patients after careful and thorough validation.

Laparoscopic surgery officially arrived as an academic imperative when the American Board of Surgery announced that successful completion of Fundamentals of Laparoscopic Surgery (FLS), a joint program of the Society of American Gastrointestinal and Endoscopic Surgeons and



Emory’s **Blayne Sayed** (left) and King’s College’s **Miriam Cortes** (directly across from Sayed) often worked together on surgical teams at King’s College Hospital prior to Cortes’ departure for her Emory fellowship.

the American College of Surgeons, would be required for general surgery certification as of the 2009-2010 academic year. FLS taught and tested the basic laparoscopic skills—suturing, knot pushing, endolooping, circle cutting, and peg transfer—surgeons needed to know to advance to more specialized procedures.

Emory surgical residents often assisted on minimally invasive procedures and trained outside the OR whenever possible, but practicing regularly to hone their skills was problematic. Their only dependable option was to jostle for time on the simulation systems at the Emory School of Medicine’s Center for Experiential Learning (ExCEL).

In the summer of 2013, a game changer arrived: the 24-hour simulation lab housed in the new Office of Surgical Education located in the repurposed H-Wing of Emory University Hospital. “Jahnvi Srinivasan and Ankit Patel did their residencies at Emory and remembered the days of



PGY1 resident **Nnaemeka Ndubisi** and PGY3 **Nathan Klingensmith** take advantage of the 24-hour availability of the department's simulation lab to work on specific skills, such as those that are tested in the FLS exam.

having to grab training whenever they could at ExCEL," says Johanna Hinman, associate director of education. "They developed PGY level-specific training objectives and scheduled practice sessions with residents to get them up to speed for the exam. They met with them in organized small groups or one-on-one in our lab, evaluated their tenuous areas, and practiced with them."

Test preparation had been traditionally limited to PGY5 residents because they had typically amassed enough experience in the OR and ExCEL to pass FLS with high scores. Now that residents had direct access to their own lab, the instructors decided to train PGY2s through PGY5s for the 2013-2014 test. Box trainers were issued to all residents, and additional laparoscopic skills courses were added to the curriculum: a resection simulation class and a bowel anastomosis course.

"Forty-eight residents were tested and they all passed," says Srinivasan, now the department's director of surgical simulation and elective programs. "Not only did trainees from the earlier classes have an opportunity to get a required

exam out of the way, they were also able to begin refining their laparoscopic skill set earlier. Going forward, we will focus FLS training on the PGY2 class so that they can concentrate on other requirements in subsequent years."

ADAPTING THE MESSAGE

Shortly after becoming available on iTunes, Emory's "Surgical Anatomy of the Liver" app fetched an Award of Excellence in the Didactic/Instructional Commercial Interactive Media category at the Association of Medical Illustrators 2014 Annual Conference. The award not only confirmed the inventive usability of the interactive 3D learning tool that Emory surgical oncologist Shishir Maithel and Emory medical illustrator Michael Konomos had painstakingly created, it also vindicated the revised approach the Thalia and Michael Carlos and Alfred A. Davis Center for Surgical Anatomy and Technique (CSAT) had enacted for spreading the word.

The app's underlying principle that surgical trainees, professionals, and educators must understand the critical role surgical anatomy plays in the operating room to minimize



Medical illustrator **Andy Matlock** creates complex medical visualization by combining his skills in 3D animation with his knowledge of human anatomy. In addition to his CSAT position, Matlock is a member of the Visual Medical Education (VME) office of the Emory School of Medicine, which also includes **Satyen Tripathi** and team leader **Michael Konomos**. VME harnesses the latest digital technology to create visual tools to improve educational and health outcomes.

complications was originally promulgated by the late, great surgical anatomist John Skandalakis, who started CSAT in 1984 with a generous gift from the Carlos and Davis families. During his career he amassed a vast bibliography of influential publications, many of which were first-time commentaries of particular anatomic topics. Skandalakis died in 2009.

“When I was a resident, I took his *Surgical Anatomy and Technique: A Pocket Manual* with me everywhere,” says Emory surgical oncologist and general surgery program director Keith Delman, current CSAT director. “By leveraging the technology of the 21st century, CSAT will maintain Dr. Skandalakis’ legacy. He disseminated knowledge through print and books, while we will use internet-based media like the liver app and handheld devices to do the same. We will capitalize on Emory’s exceptional teaching and distribute it to a global audience.”

CSAT’s next offering will be a video atlas app spotlighting the anatomic and technical considerations for standard

general surgical procedures. The interface is being designed by CSAT medical illustrator Andy Matlock so that it can be consulted anytime, anywhere, and in any situation. The open and laparoscopic methods of performing cholecystectomy and appendectomy will provide the presentation formats that the other procedures will follow. Features will include step-by-step video presentations shot in the OR, 3D renderings of the procedures’ associated anatomy, and supplemental videos covering such topics as suturing and incisions.

An app that will examine the structure of male and female pelvic anatomy is also in production. The relationship of the bony pelvis, pelvic floor, muscles, and connective tissue to such organs as the bladder, reproductive organs, colon, and rectum will be described. In addition, Matlock is working on Version 2.0 of the liver app, which will feature a CT scan function that will allow users to see the connection between 2D tomographic images of the liver and the 3D anatomy encountered in the OR.

...to cultivate solutions

Mandy Ford, shown here with her research resident **Maggie Diller**, chairs the Community of Basic Scientists of the American Society for Transplantation and received the AST's 2014 Career Development Award for Basic Science.



CHANGING OF THE GUARD

When Allan Kirk left Emory to chair the Department of Surgery at Duke University Medical Center, his alma mater, the department's loss of a well-liked and acclaimed researcher was calmed by the appointment of two of its most ascendant scientists to Kirk's former research administration positions. Notable researchers in their own right, Craig Coopersmith and Mandy Ford possessed the leadership skills and history of multi-disciplinary collaboration required to continue Kirk's legacy. Their shared PI duties on an NIH R01 studying the interplay of cancer with sepsis and another evaluating the impact of alcoholism on the

pathophysiology of sepsis signified the cooperation that could maximize the department's research resources.

An established investigator of sepsis and shock and associate director of the Emory Critical Care Center (ECCC), Coopersmith succeeded Kirk as the department's vice-chair of research. Since arriving at Emory in 2009 from Washington University, where he worked with future ECCC director Timothy Buchman, oversaw the surgical critical care fellowship, and co-directed the SICU at Barnes-Jewish Hospital, Coopersmith has received several NIH grants, including a T32 critical care training grant. His discovery that prevention of apoptosis—widely considered a beneficial therapy for septic patients—turns deadly if sepsis occurs in the setting of cancer is one of his most notable achievements.

“I have experienced firsthand how much superior mentorship contributes to making research a successful component of an academic career, and I plan on providing that same guidance to researchers and future leaders in the department,” he says.

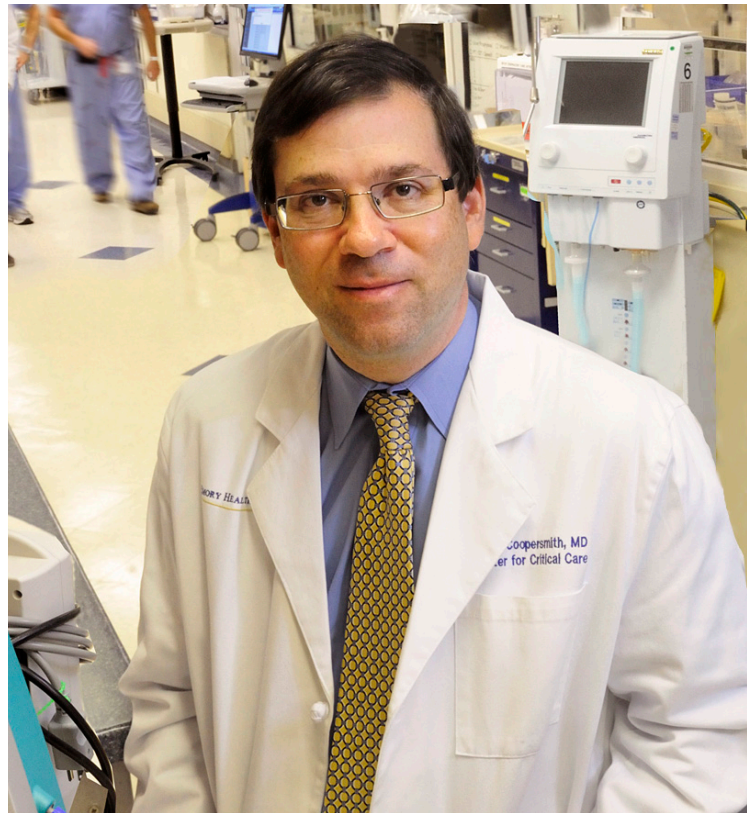
Ford’s appointment to scientific director of the Emory Transplant Center (ETC) was a logical step. She trained at Emory, joined our faculty, and became a leading researcher of cellular mechanisms of T cell responses in transplantation and immunosuppression. She was a vital member of the research team led by ETC director Thomas Pearson and current Emory School of Medicine Dean Christian Larsen that helped develop belatacept as a successful new class of immunosuppressant for kidney transplant recipients. She continues to spearhead efforts to develop and optimize next generation costimulation blockade immunosuppression following transplantation. Her current portfolio includes two R01s, several private foundation grants, and the ETC’s T32 training grant.

“In my new role, I plan on fostering new directions and interdisciplinary research collaborations so that the ETC will remain at the forefront of efforts to achieve rejection-free transplant survival without continuous drug therapy for transplant recipients,” she says.

ADAPTING THE LESSONS OF WAR

The types of extreme injury cases treated in wartime field hospitals are not so different from those encountered in civilian trauma centers. Patients from both theaters—whether soldiers wounded in roadside bombings or civilian victims of high-speed collisions—can reach life-threatening states very rapidly, and physicians’ split second decisions during these critical moments can have considerable physiological and fiscal implications.

In recent armed conflicts, new types of body armor and advanced medical resources in the field led to increased survival from catastrophic injuries. To standardize care in these circumstances and control variable outcomes and costs, the Department of Defense developed biomarker panels and decision-making algorithms that corresponded to the different types of severe injuries experienced by combat casualties. With this system, crucial decisions were shaped by fast and dependable data interpretation rather than physicians’ subjective frames of reference and differing abilities to decipher multiple data streams.



Craig Coopersmith is president-elect of the Society of Critical Care Medicine and a member of the American Society for Clinical Investigation, which only accepts physician-scientists who have translated research to the advancement of clinical practice.

In 2014, the Defense Health Program of the DoD launched the Surgical Critical Care Initiative (SC2i) to translate these decision-making tools to civilian critical care and to share any revisions back to the DoD to further refine battlefield procedures. The SC2i is comprised of Emory University School of Medicine, Duke University School of Medicine, Uniformed Services University of the Health Sciences (USUHS), Henry M. Jackson Foundation for the Advancement of Military Medicine, Naval Medical Research Center (NMRC), Walter Reed National Military Medical Center, and DecisionQ Corporation.

Emory was selected because of its acknowledged role in academic surgery and its integrated critical care network. Timothy Buchman, director of the Emory Critical Care Center, is the Emory-based PI, and Christopher Dente, associate director of trauma at Grady Memorial Hospital, is the lead site investigator at Grady’s Level I trauma center. Dente is directing another DoD-funded study that is developing a wound closure algorithm similar to the DoD’s formula for military casualties.

Teams at Grady and Duke’s trauma centers and critical care services are collecting, storing, and analyzing a wide range of information, from basic patient observations to

bio-banked tissue samples. Once this phase is completed, USUHS and NMRC will work with DecisionQ—which specializes in data mining and creating predictive models—to design a computerized, statistical system based on the DoD’s decision-making algorithms. Ideally, the system will integrate these diverse data streams to produce decision guidance tools according to specific patient scenarios. The tools will then be tested at Grady and Duke.

In the future, these tools could help optimize outcomes across other disciplines that require complex medical decision making, including emergency medicine, orthopaedics, oncology, and transplantation.

LOCAL AND NATIONAL

Winship Cancer Institute of Emory University was one of only five centers in the Southeast and 30 nationwide to be chosen as a Lead Academic Participating Site for the National Cancer Institute’s National Clinical Trials Network (NCTN). Charles Staley, chief of the division of surgical oncology and chief medical officer at Winship, will serve as co-PI of NCTN’s Winship outpost with medical oncologist Suresh Ramalingam and radiation oncologist Jonathan Beitler.

“The NCTN is now the NCI’s primary infrastructure to conduct phase II and III cancer clinical trials, and is expected to enroll over 17,000 patients per year,” says Staley. “Our involvement acknowledges our leadership in national clinical trials and allows us to continue to offer the most advanced cancer treatments to our patients.”

The three co-PIs will use the grant to support efforts to optimize the design and conduct of Winship’s trials, to develop collaborative networks between NCTN member groups, and to support patient enrollment in NCTN trials.

When Staley joined Emory in 1995 he began coordinating national efforts for clinical cancer research as surgical

committee co-chair of the Eastern Cooperative Oncology Group (ECOG). He is surgical chair of ECOG’s Gastrointestinal Committee and the local-PI for the Emory Clinic and Atlanta VA Medical Center sites of ECOG’s multicenter trials. His current research includes an NIH-funded study of the development of targeted superparamagnetic iron oxide nanoparticles for treating pancreatic cancer. He is conducting this work with his colleague and surgical oncology scientist Lily Yang.



In **Kate Winne’s** many years of battling colon cancer, **Charles Staley** has been her surgeon and performed five procedures in the process. Her husband, WSB-TV reporter **Mark Winne**, is master of ceremonies for the Winship Cancer Institute’s Win the Fight 5K.

UP AND COMING

Luke Brewster, Felix Fernandez, Kevin McConnell, and Muralidhar Padala embody the depth of commitment and leading-edge thinking that attracts support in an inordinately competitive research funding environment. Renewal sustains progress, and these relatively new faculty have made the most of Emory’s research advocacy, access to mentors, and tradition of innovation while contributing their own fresh perspectives to advancing the investigative goals of their disciplines.

In addition to receiving an R01 from the Agency

for Healthcare Research and Quality to identify patients at risk for reduced long-term survival following lung cancer surgery and the surgical strategies that could benefit them most, Felix Fernandez was named a Cardiothoracic Surgical Investigator by the Graham Foundation of the American Association for Thoracic Surgery. This award will fund his effort to integrate patient reported outcomes (PROs) regarding lung cancer surgery into the data Emory submits to the Society of Thoracic Surgeons General Thoracic Surgery Database (STS-GTSD). While PROs have become vital to treatment planning, the STS-GTSD is currently unable to import them into its patient records.

After collecting PROs from patients undergoing lung cancer surgery using an NIH outcomes measurement tool, Fernandez's team will upload them to the GTSD with a special app developed by Georgia Tech research scientist Scott Robertson. If successful, this system could allow PROs to refine STS-developed operative risk prediction models for patients having surgery for lung cancer as well as other diseases and conditions. The study will also use PROs to compare the effectiveness of minimally invasive vs. thoracotomy surgery and sublobar resection vs. lobectomy pulmonary resection for early stage lung cancer.

To develop novel therapeutics for patients with peripheral arterial disease (PAD), Luke Brewster is analyzing the mechanisms of arterial stiffening and the regenerative potential of mesenchymal stem cells in patients with PAD. He recently received two K08 grants—one from the NIH, the other from the Society for Vascular Surgery Foundation/American College of Surgeons—to study the critical steps that regulate arterial stiffening in response to altered blood flow. Under the mentorship of Hanjoong Jo of the Georgia Tech-Emory Coulter

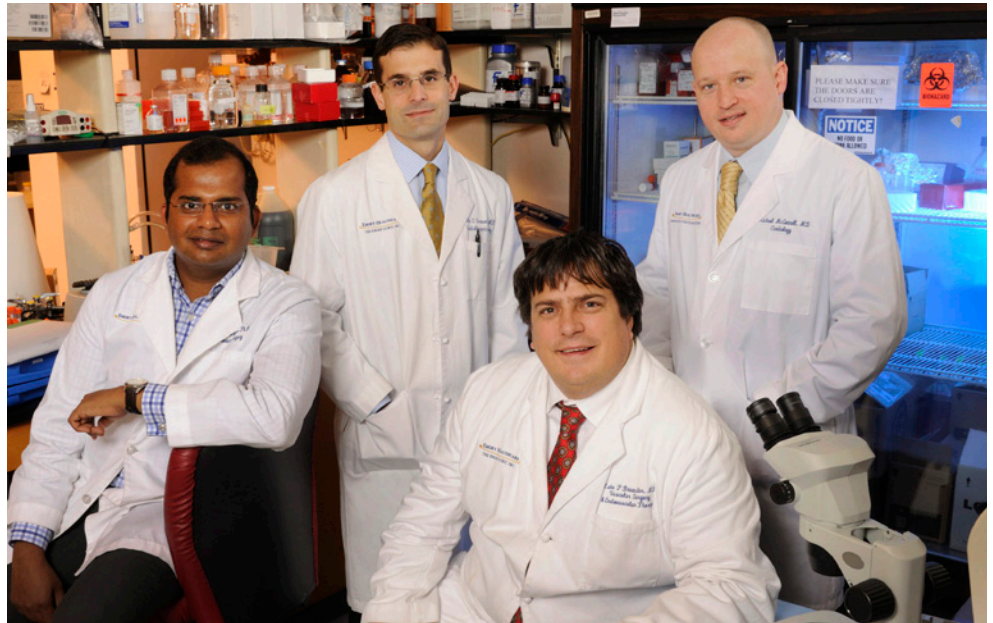
Department of Biomedical Engineering, Emory cardiology director W. Robert Taylor, and Craig Coopersmith, Brewster will use this opportunity to design strategies that limit arterial stiffening and pathologic remodeling as well as promote tissue regeneration for the prevention of major amputation.

Kevin McConnell's focus on uncovering the mysterious pathophysiology of sepsis was initiated by his frequent encounters with septic patients during resident rotations on the ICU at Barnes-Jewish Hospital. Inspired to learn more about the often lethal disease, he became a research fellow in Craig Coopersmith's pre-Emory lab at Washington University, assisting primarily on studies of the infection's interaction with the immune system.

When McConnell became an attending at Emory University Hospital's ICU, his clinical routine reinforced

his research agenda. In 2013 he received a Shock Society Research Fellowship for Early Career Investigators to study lymphocyte activation and trafficking in sepsis, followed by an NIH K08 Award in 2014 to determine how the immune system is disrupted by sepsis, how that disruption can be prevented, and how the immune system can be modulated to fight the disease. Fittingly, Coopersmith and Mandy Ford are mentoring the project.

A bioengineer by training, Muralidhar Padala directs the Structural Heart Disease Research and Innovation Program in the Cardiothoracic Research Laboratory of the Carlyle Fraser



Rising investigators: **Muralidhar Padala, Felix Fernandez, Luke Brewster, and Kevin McConnell.**

Heart Center. The program undertakes both clinical and basic science research of heart valve disease and therapies as a target to decelerate heart failure. In 2014, Padala received the highly competitive American Heart Association's National Scientist Development Grant to study the impact of mitral valve leakage on structural remodeling of the left heart towards failure to develop new biomaterials to tweak and halt this remodeling process.

Padala's long-term vision of establishing a pipeline from the lab to clinical practice is empowered by his work with researchers from different scientific and engineering fields and active collaborations with such cardiothoracic clinical surgeon-scientists as Robert Guyton, Bradley Leshnower, Eric Sarin, and Vinod Thourani. "Translating ideas scribbled on paper into approved and available devices is the ultimate goal," he says.

NEW FACULTY

SHELLY ABRAMOWICZ, DMD, MPH, directs the oral and maxillofacial surgery outpatient clinic at Grady Memorial Hospital. Her specialties are pediatric oral and maxillofacial surgery, TMJ dysfunction in children with juvenile idiopathic arthritis, orthognathic surgery, maxillofacial trauma, and benign maxillofacial pathology.

MAZIN AL SALIHI, MD, PHD, primarily performs heart and lung procurement for transplantation. When he arrived in the U.S. from Iraq, where he held several clinical positions, he joined the Cleveland Clinic and completed fellowships in cardiac surgery and heart and lung transplantation.

After serving on the faculty at Georgia Baptist Medical Center and the Georgia Baptist/Medical College of Georgia Vascular Fellowship, **MICHAEL CLARK, MD, PHD,** joined the Heart and Vascular Institute at Saint Joseph's Hospital. Later he became an Emory Specialty Associate based at Saint Joseph's.

PETER H'DOUBLER, MD, was at the University of Virginia before moving to Atlanta to begin private practice in 1991. He served as chief of vascular surgery at Saint Joseph's Hospital from 2000-2004, and was appointed head of vascular services at Saint Joseph's Heart and Vascular Institute in 2008.

MATTHEW HIRO, MD, did his plastic surgery residency at the University of South Florida and a hand surgery fellowship at Loyola University Chicago. His interests include adult and pediatric hand and wrist surgery, extremity reconstruction, and reconstructive microsurgery.

JUVONDA HODGE, MD, works with Grady Burn Center director Dr. Walter Ingram as the center's assistant medical director. She served as associate director of the burn unit at the University of South Alabama Medical Center.

VERONICA JONES, MD, did her breast surgical oncology fellowship under the mentorship of Dr. Sheryl Gabram at Emory. Her specialties include benign and malignant breast disease, disparities in breast cancer outcomes, and new technologies in breast cancer care.

CHARLES LEWINSTEIN, MD, started practicing at Saint Joseph's Hospital in 1992. He has served on the board of directors of Saint Joseph's Heart and Vascular Institute as well as chief of the hospital's section of vascular surgery.

STEVEN MACHEERS, MD, did his cardiothoracic surgery residency and fellowship at Emory. He is an established surgeon at Emory Saint Joseph's Hospital. His research portfolio includes studies of new valve systems for treating high risk patients with aortic stenosis.

JONATHAN MEISEL, MD, completed his pediatric surgery fellowship at Cohen Children's Medical Center. During his research fellowship with mentors Dr. Judah Folkman and Dr. Mark Puder of Boston Children's Hospital, he studied parenteral nutrition-associated liver disease, omega-3 fatty acids, and murine models of tissue regeneration.

MARK MITTENTHAL, MD, chaired the Department of Surgery and was medical director of the vascular laboratory at Northside Hospital. He was also chief of vascular surgery and directed the vascular laboratory at North Fulton Medical Center. He began practicing at Saint Joseph's Hospital in 2000.

RONALD PARSONS, MD, completed an abdominal transplant surgery fellowship at New York-Presbyterian Hospital. During his research fellowship at the University of Pennsylvania, he studied mechanisms of B cell tolerance after islet transplantation and humoral tolerance after donor lymphocyte infusion.

As a clinical scholar in residence at the ACS Division of Research and Optimal Patient Care, **MEHUL RAVAL, MD,** did an assessment of multi-specialty representation and case-mix adjustment in the ACS NSQIP and helped coordinate the initial testing of the ACS NSQIP pediatric module. His pediatric surgery fellowship was done at Nationwide Children's Hospital.

J. MARK RHEUDASIL, MD, held several positions at Northside Hospital, including chief of the Department of Surgery and co-director of the vascular laboratory. In 2008, he was appointed chief of the Department of Surgery at Saint Joseph's Hospital.

MANU SANCHETI, MD, completed his cardiothoracic surgery residency on a general thoracic track at Emory. His interests include thoracic oncology, minimally invasive thoracic surgery, esophageal surgery, lung transplantation, outcomes in thoracic oncology, and cost and quality improvements in thoracic surgical services.

During his general surgery residency at the University of Pennsylvania, **MATTHEW SANTORE, MD,** did an in utero stem cell transplantation research fellowship in Dr. Alan Flake's lab at Children's Hospital of Philadelphia. He joins us after completing his Emory pediatric surgery fellowship.

SUSAN SHAFII, MD, treats venous disease at the Emory Aesthetic Center at Paces and vascular trauma at Grady Memorial Hospital. She is assisting Grady vascular surgery chief Dr. Ravi Rajani in the development of Grady's vascular surgery service.

JOSEPH ZARGE, MD, is a former member of Emory Specialty Associates at Saint Joseph's Hospital. He has been involved in clinical trials of carotid stenting, aortic aneurysm endografts, and the HeRO dialysis graft.

FACULTY APPOINTMENTS AND AWARDS

Shipra Arya, MD, SM

- Surgical Outcomes Club Research Fellowship

Luke Brewster, MD, PhD

- 2014 Jay D. Coffman Early Career Investigator Award, Council on Peripheral Vascular Disease, American Heart Association
- Executive Committee, International Society of Applied Cardiovascular Biology

- Editorial Board, Journal of Surgical Research

Kenneth Cardona, MD

- Scientific Program Committee, Society of Surgical Oncology

- Scientific Program Committee, Americas Hepato-Pancreato-Biliary Association

Grant Carlson, MD

- 2014 Outstanding Patient Satisfaction Award, The Emory Clinic

Craig Coopersmith, MD

- President-Elect, Society of Critical Care Medicine

- Special Study Section Review for Injury and Perioperative Sciences, National Institute of General Medical Sciences, NIH

S. Scott Davis, MD

- Recognition of Excellence Award, 2014 Annual Meeting, Society of American Gastrointestinal and Endoscopic Surgeons

- Communications Committee, Society of American Gastrointestinal and Endoscopic Surgeons

- Editorial Board, Case Reports in Medicine – An Open Access Journal

Keith Delman, MD

- 2014 Deans Teaching Award, Emory University School of Medicine

- Vice-Chair, Training Committee, Society of Surgical Oncology

- Editor, Melanoma Section, Annals of Surgical Oncology

Christopher Dente, MD

- Executive Committee, Acute Care Surgery Committee, American Association for the Surgery of Trauma

- Program Committee, Eastern Association for the Surgery of Trauma

Thomas Dodson, MD

- 2014 Emory Williams Distinguished Teaching Award, Emory University

Yazan Duwayri, MD

- Arterial Quality Committee, Society for Vascular Surgery

- Grants and Scholarship Committee, Vascular and Endovascular Surgery Society

Felmont Eaves, III, MD

- Oral Board Examiner, American Board of Plastic Surgery

Felix Fernandez, MD

- Workforce on National Databases, Access and Publications Task Force, Society of Thoracic Surgery

Seth Force, MD

- Editorial Board, Annals of Thoracic Surgery

Mandy Ford, PhD

- 2014 Basic Science Career Development Award, American Society of Transplantation

- Chair, Community of Basic Scientists, American Society of Transplantation

- Leadership Committee, Transplantation and Immunology Network

- Section Editor, "Literature Watch," American Journal of Transplantation

Theresa Gillespie, PhD

- Working Group to Develop Mechanisms to Monitor and Report Research & Development for Neglected Diseases in Global Health, World Health Organization

- Global Task Force Committee, American Cancer Society

- Glenn Research Scholar, Glenn Family Breast Cancer Center

Robert Guyton, MD

- Millipub Club, Emory University School of Medicine

Karim Halazun, MD

- 2015 Vanguard Prize, Foundation of the American Society of Transplant Surgeons

- Exam Development Committee, American Society of Transplant Surgeons

Michael Halkos, MD

- Editorial Board, Journal of Robotic Surgery

William Brent Keeling, MD

- International Editorial Board, Journal of Cardiothoracic Surgery

David Kooby, MD

- Development Committee, Americas Hepato-Pancreato-Biliary Association

- Taskforce for revising staging of hepatobiliary and pancreatic malignancies, AJCC Cancer Staging Manual, 8th Edition

Albert Losken, MD

- Nominating Committee, Southeastern Society of Plastic and Reconstructive Surgeons

Shishir Maithe, MD

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

- Editorial Board, Annals of Surgical Oncology

Bryan Morse, MD

- Faculty Mentor, 1st Place Georgia Institute of Technology BME Team, Spring 2014 Senior Biodesign Capstone Project Competition, "Open Abdominal Wall Closure Device"

Foad Nahai, MD

- Trustee, American Society of Plastic Surgeons

Kenneth Newell, MD, PhD

- President, American Society of Transplantation

Jeffrey Nicholas, MD

- LifeLink Professional Development and Clinical Practice Subcommittee, LifeLink of GA

- Georgia Trauma Research Committee

Muralidhar Padala, PhD

- Bioengineering Study Section, American Heart Association

- National Scientist Development Grant, American Heart Association

Ankit Patel, MD

- Fundamentals of Endoscopic Surgery Committee, Society of American Gastrointestinal and Endoscopic Surgeons

- Editorial Board, Bariatric Surgical Practice and Patient Care

Rachel Patzer, PhD

- Psychosocial Community of Practice, American Society of Transplantation

- Posters of Distinction (three posters), 2014 World Transplant Congress

Thomas Pearson, MD

- Associate Councillor, Region 3 (Georgia, Florida, Alabama, Mississippi, Louisiana, Arkansas, Puerto Rico), The Organ Procurement and Transplant Network and United Network for Organ Sharing (OPTN/UNOS)

Barbara Pettitt, MD

- 2014 Olga Jonasson Distinguished Member Award, Association of Women Surgeons

Jonathan Pollock, MD

- Program Director, Pan-African Academy of Christian Surgeons, Soddo Christian Hospital and Myungung Christian Medical Center, Ethiopia

- Surgical Clerkship Director, Myungung Medical College, Addis Ababa, Ethiopia

Ravi Rajani, MD

- Editorial Board, Vascular Medicine and Research

Manu Sancheti, MD

- Best Scientific Poster Presentation Award, 2014 ACS Clinical Congress

Jyotirmay Sharma, MD

- Global Affairs Committee, Association of Academic Surgeons

- Resident, Student and Fellow Committee, Southeastern Surgical Association

- Certification Exam Committee (Endocrine Surgery), American Board of Surgery

Charles Staley, MD

- Local Co-PI, Winship Cancer Institute of Emory University, National Clinical Trials Network of the National Cancer Institute

- President-Elect, Georgia Surgical Society

Vinod Thourani, MD

- Chair, Education Committee, American Association for Thoracic Surgery

- Co-Chair, Surgeon Scientific Council, American College of Cardiology

- Council on Education and Member Services Operating Board, Society of Thoracic Surgeons

- Editorial Board, Interventional Cardiology,

- Editorial Board, Journal of Cardiac Surgery

Nicole Turgeon, MD

- Co-Chair, Education Committee, American Society of Transplantation

Ravi Veeraswamy, MD

- President-Elect, South Asian American Vascular Society

Joshua Winer, MD

- ACS Cancer Liaison Physician, Atlanta VA Medical Center

Mark Wulkan, MD

- President, International Pediatric Endosurgery Group

...to look beyond ourselves



“Compassion is what gets us to L’Hôpital Sainte-Thérèse, but thinking on our feet and doing our best with not nearly enough is what makes it work,” says general surgeon and Medishare veteran **Jahnavi Srinivasan**.

Despite such conditions as oppressive heat, power outages, and an OR that functioned on a diesel generator, the Emory Medishare team performed 70 procedures on its 7th surgical trip to Haiti in the summer. The team of faculty surgeons, urologists, and anesthesiologists; medical students; surgery residents; and mid-level practitioners set up shop for three weeks at L’Hôpital Sainte-Thérèse de Hinche in Haiti’s Plateau Central, the most medically underserved region in the country. Many of the patients walked for miles to receive treatment.

Emory Medishare—a branch of the national non-profit Project Medishare for Haiti—blends medical education with humanitarian objectives. In preparation for the trips, the team’s medical students raise funds to cover medical supplies, airfare, and other expenses. Private and corporate donations can reduce the weight of this responsibility,

lessen the impact of any uncovered expenses on team members, and fuel the successes of these trips.

The scale of the department’s academic, clinical, and research endeavors offers many opportunities to help sustain our mission, be they international or closer to home. Your generosity could fund an endowed chair, support a faculty member or research team’s investigations, or contribute to a component of our multi-specialty training programs. By giving, you become part of our efforts to provide the best surgical care, to be the best place to train, and the best place to conduct innovative research.

To contribute to any aspect of our programs, please contact Jimmy Owen, director of development for the Department of Surgery, james.p.owen@emory.edu, 404.778.5429. To give online, scan the QR code with your mobile device or go to emory.edu/give.





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...to augment our strengths

Demonstrating a stellar model of multidisciplinary collaboration, urologic oncologist Viraj Master (foreground left) and surgical oncologist Keith Delman (foreground right) perform videoscopic groin dissection, an alternative minimally invasive approach they developed for removing cancerous lymph nodes in the groin.

surgery.emory.edu