Global Stage
Expanding Patient Care
Beyond the Triangle

Duke Surgery
FALL 2017
What images do the words “Duke Surgery” conjure? The images have undoubtedly changed. Emerging in 1930 as a nascent regional surgical service, Duke Surgery has grown to command an international surgical stature made apparent in our fall newsletter, which highlights our faculty’s efforts to address global health challenges. With partners from across the globe, our faculty are working to improve outcomes of brain injury in Tanzania, advance pediatric care in Guatemala and Uganda, combat global hearing loss, and impart knowledge and expertise in bariatric and thoracic surgery in China. We are advancing surgical science and education through academic partnerships in Singapore, and have become a worldwide destination site for postgraduate training in clinical practice and translational science. This global reach has not diluted, but rather strengthened, our capacity to provide top-flight clinical care at home, and deliver impactful science benefiting patients.

Given our growth in scope and influence, our aspirational reach for local efficacy, our growing global reach has improved our ability to rise above the origins of implicit bias and its impact on decision-making in healthcare.

To that end, this year begins an explicit dive into implicit bias across the entire department, to be launched by welcoming Benjamin D. Reese, Jr., PsyD, Chief Diversity Officer for Duke University, as our Grand Rounds guest, presenting on the origins of implicit bias and its impact on decision-making in healthcare.

It is such a pleasure to see Duke Surgery simultaneously display such outward vision, and introspection.

Sincerely,
Allan D. Kirk, MD, PhD, FACS
David C. Sabiston, Jr. Distinguished Professor and Chairman of Surgery

Duke University School of Medicine
Surgery-in-Chief
Duke University Health System
Access to safe, affordable surgical care still remains a privilege, one enjoyed by only a minority. According to a 2016 report by the Lancet Commission on Global Surgery, 2 out of every 3 people in the world lack access to surgical care.

To bridge this gap, Duke Surgery has extended its reach beyond the City of Medicine and onto the global stage, with several initiatives combining research, training, and collaboration to establish sustainable healthcare in areas of need.

IMPROVING OUTCOMES FOR TRAUMATIC BRAIN INJURY PATIENTS IN TANZANIA

When Catherine Staton, MD, first arrived in Moshi, Tanzania, her goal was to improve outcomes for traumatic brain injury patients at the Kilimanjaro Christian Medical Centre (KCMC), a regional referral hospital. As part of the Division of Emergency Medicine, Dr. Staton was impelled to improve quality of care for patients and identify the root causes of injury.

It became clear that the causes were twofold: a high incidence of traffic injuries and rampant alcohol use. The often lethal combination has created an epidemic in a country with an already struggling medical system.

“Currently, 1 out of every 3 injury patients that present to the KCMC Emergency Department for care has at-risk alcohol use,” says Dr. Staton. “There is no infrastructure to curb the harm that can come from alcohol. It creates a serious public health risk, and the hospitals are overwhelmed with traumas.”

For six months of the year, Dr. Staton moves with her family to Tanzania, where she continues her research at KCMC and is developing an alcohol intervention for patients. Through focus groups and surveys, Dr. Staton uncovered several of the cultural factors that lead to rampant and risky alcohol use, including access to alcohol at a young age, consuming alcohol for nutrition, and a lack of regulation around alcohol sales, use, or drunk driving.

The feasibility trial beginning in the spring of 2018 will screen all Emergency Department patients and conduct an intervention similar to the brief interventions performed with trauma patients in the United States. These discussions will educate patients on accepted standards for alcohol use as well as known complications from abuse.

Through its partnership with Duke, KCMC has seen many positive changes, including the growth of the medical school and the addition of trained physicians. In Tanzania, residents must pay for their residency, so Duke Emergency Medicine currently sponsors two residents to become the second and third trained Emergency Medicine physicians at KCMC.

“It has been absolutely incredible to see,” says Dr. Staton. “The Duke Division of Emergency Medicine has given money to sponsor the residents, but our faculty members have also donated their own overtime hours to support them directly.”

This support makes a tremendous difference to a medical center with limited trained personnel. The ongoing program is still collecting clinical hour donations, 100% of which will be donated to sponsoring Tanzanian Emergency Medicine residents.
IMPROVING PEDIATRIC CARE IN GUATEMALA AND UGANDA

In Guatemala, 9,000 miles from Tanzania, Chief of Pediatric General Surgery Henry Rice, MD, uses similar methods to improve pediatric care. Duke’s relationship with its partners in Guatemala has evolved from merely providing services in 2010 to a much broader initiative named the Safety and Quality Fellowship. In early 2016, Dr. Rice visited Guatemala to create a baseline assessment of health practices, and to meet with potential fellows who would take part in the training initiative.

“Our goal is to help Guatemalan physicians and hospital administrators develop their own capacity to enhance their pediatric surgical care,” says Dr. Rice. “This involves educational programs that provide clinical-based experience and training for physicians that they would have no access to otherwise.”

In September 2017, Duke welcomed its first two fellows to the program, Sindy Mendez Soveranis, MD, and Carla Ramírez, MD, two fellows to the program, Sindy Mendez Soveranis, MD, and Carla Ramírez, MD, two fellows to the program, Sindy Mendez Soveranis, MD, and Carla Ramírez, MD, two fellows to the program. After returning to Duke as faculty, they now partner with remote communities in Alaska that face some similar challenges as patients in Tanzania.

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Though Dr. Rice says fundraising is nineteenth of the challenge, his goal is for Duke to continue to be a support system in these areas and others where resources are often limited.

SCREENING FOR HEARING LOSS IN ALASKA

Duke physicians do not need to leave American soil to find communities with unique healthcare challenges. Susan Emmett, MD, MPH, Division of Head and Neck Surgery & Communication Sciences, works in rural Alaska to reduce hearing loss, a major health disparity in the Alaska Native population.

Dr. Emmett’s commitment to global health began in Tanzania, where she completed a year-long Howard Hughes Medical Institute Research Training Fellowship as a Duke medical student. After returning to Duke as faculty, she now partners with remote communities in Alaska that face some similar challenges as patients in Tanzania.

“The randomized trial will test a new method of completing school hearing screening and referral,” she says. “We will use the first clinically validated cell phone-based screen, a technology developed in South Africa. Part of its power is that the technology does not require an audiologist to complete the screening, so it could extend screening capabilities to remote areas.”

The unique nature of healthcare in Alaska led to the second innovation of Dr. Emmett’s study. To address the barrier of distance in a state where 75% of communities are not connected to a hospital by road, Alaska has developed one of the most advanced telemedicine systems in the world. With such an innovative and sophisticated system already in place, Dr. Emmett and her partners at Norton Sound are utilizing the existing telemedicine network for school hearing screening referrals rather than establishing new infrastructure.

Similar to the cell-based hearing screen, telemedicine technology has become cell-based as well, making it a viable option for care in remote communities across the world. The model of mobile telemedicine in Alaska could have the potential for global impact on hearing loss disparities, and Dr. Emmett hopes that the current study will shed light on this process.

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To address the tremendous burden of hearing loss in Arctic and sub-Arctic regions, Dr. Emmett is collaborating with a tribal health organization called the Norton Sound Health Corporation to develop a new paradigm to identify children with hearing loss and connect them to care.

“Untreated hearing loss has a lifelong impact,” explains Dr. Emmett. “In early childhood, hearing loss can cause speech and language delays. In school-aged children, even mild hearing loss is linked to lower performance and higher dropout rates, and adults with hearing loss are more likely to be low-income or unemployed.”

Screening often and early is the key to effective prevention and care, but current hearing tests require specialized equipment and a trained audiologist, luxuries few remote Alaska communities have. Though school-based hearing screenings are already required by the state of Alaska, protocols vary and children are often lost to follow-up.

Dr. Emmett’s work, however, will combine two technologies that she considers to be game-changing.

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In September 2017, Duke welcomed its first two fellows to the program, Sindy Mendez Soveranis, MD, and Carla Ramírez, MD, from Roosevelt Hospital in Guatemala City. Duke Clinical Research Coordinator Bria Johnston was instrumental in organizing the two-week fellowship program held at Duke.

“This is a pretty ambitious program that allows the participants to go back to their local environments in a contextualized setting, and develop locally driven quality and safety initiatives, and then learn how to assess these over time,” says Dr. Rice. The complete training curriculum would not have been successful without the generosity of Duke Surgery faculty, who met with the fellows to model the transition from safety and quality theory to actual practice, and discuss specific problem-solving strategies for issues at Roosevelt Hospital.

The Safety and Quality Fellowship could be replicated in other areas outside of Guatemala. Dr. Rice works closely with pediatric surgeon Tamara Fitzgerald, MD, PhD, who implements similar strategies to train pediatric surgeons in Uganda and sub-Saharan Africa, areas that have especially low surgeon-to-child ratios. In 2013, there was only one pediatric surgeon for 39 million people.

“My work focuses on empowering and increasing the numbers of pediatric surgical providers,” says Dr. Fitzgerald. “My Ugandan colleagues understand the problems, limitations, and available resources, and I can provide them my surgical experience, encouragement, and advocacy.”

Though Dr. Rice says fundraising is nine-tenths of the challenge, his goal is for Duke to continue to be a support system in these areas and others where resources are often limited.

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COMMITMENT & COMMUNICATION: CATALYSTS FOR CHANGE

Global change does not happen overnight. Back in Durham, after two weeks in the Safety and Quality training, Drs. Soveranis and Ramirez prepared to return to their hospital in Guatemala, taking with them valuable tools that they feel will be a cornerstone of change.

The challenges at her hospital are difficult ones to solve, says Dr. Ramirez, but she is confident that effective communication among the staff and a commitment to progress will continue to make a difference.

“Working with Duke has showed us that we have to start small in making changes,” says Dr. Ramirez. “We can then continue to build, and by improving our communication and using tools that we have been given, we can improve the environment for both our staff and our patients.”

These small changes—in Guatemala, Tanzania, Uganda, Alaska, Durham, and elsewhere—can combine to enact change on a global scale.
LARGE-SCALE, COLLABORATIVE EFFORT COULD HELP EASE HEARING LOSS

Rising rates of hearing loss demand better access to prevention and treatments

Amara Omeoke
Duke Health News

A team of hearing experts at Duke University School of Medicine and the Duke Global Health Institute is calling for a comprehensive, worldwide initiative to combat hearing loss.

The percentage of people worldwide with hearing loss has been on the rise, increasing from 14% to 18% percent over the past 25 years. Recent data estimate half a billion people worldwide have moderate to severe hearing losses.

“The trend is ever-upward, despite many efforts that have been mounted worldwide to rein in the growing burden of hearing loss,” says Blake Wilson, PhD, Adjunct Professor of Surgery, Division of Head and Neck Surgery & Communication Sciences.

“Thus far, those efforts have not put a dent in the problem’s growth and so something more is needed.”

The issue is one some U.S. lawmakers have recently acknowledged. For example, a proposal introduced in the House of Representatives in March calls for the Food and Drug Administration (FDA) to increase accessibility to some hearing aids by allowing them to be sold over-the-counter.

Such measures hint at the scope of the problem. In a review article published July 10 in The Lancet, Wilson and colleagues highlight accessibility to screenings, treatments and preventive measures as keys to stemming the rise of hearing loss not only in the United States, but across the world.

They also offer VISION 2020, the global campaign launched by the World Health Organization and the International Agency for the Prevention of Blindness in 1999 to eliminate avoidable blindness by 2020, as a model for a global hearing loss initiative.

“Efforts to combat hearing loss have not been particularly well-coordinated on a global scale,” says Dr. Wilson. “That is why the VISION 2020 partnership offers a compelling template for a similar program for hearing. It would provide a focus for support and facilitate the needed efforts.”

The authors suggest that the initiative could tap into resources at local health institutes and centers at universities, starting at Duke and hopefully including other such resources worldwide.

“The call to action in this article provides a watershed opportunity in the history of hearing health by presenting a feasible roadmap to marshal disparate global endeavors into a coordinated and effective strategy,” explains Dr. Francis. “Duke’s legacy of successful collaborations in global health, biomedical engineering and clinical research equips us to serve as a valuable partner with other stakeholders in this global initiative.”

Like the proponents of the hearing aid proposal in Congress, the authors emphasize the need to improve access to treatments for hearing loss, particularly through the use of low-cost, tech-savvy interventions. In their report, they highlight recommendations from prior research they believe could be particularly effective if implemented, including:

• Reducing treatment costs by using smartphones for hearing assessments, assisted-hearing devices and telemedicine, particularly in low- and middle-income countries
• Increasing access to screenings in low- and middle-income countries for diseases that cause hearing loss
• Increasing awareness about damagingly loud sounds from headphones and a multitude of other sources, particularly in middle- and high-income countries

“These actions are relatively inexpensive and they show that unprecedented opportunities are available to increase access to hearing health care worldwide,” says Dr. Wilson.

In addition to Wilson and Tucci, authors include Michael Merson, MD, Wolfgang Joklik Professor of Global Health at Duke, and Gerard O’Donoghue, MD, Professor of Otolaryngology at the University of Nottingham in the United Kingdom. The authors report no financial conflicts.

In April, Duke vascular surgeons introduced 3D imaging that harnesses the power of the cloud to facilitate endovascular aneurysm repair (EVAR).

Developed by CYDAR Medical in the United Kingdom, fusion imaging combines cloud computing with 3D overlay technology, producing an on-screen image that “fuses” computed tomography (CT) images taken before surgery with live fluoroscopic images during the procedure, giving surgeons a visual road map to help guide stent-graft insertion.

Because this technology is connected to the cloud, the overlays update in real-time, providing surgeons with a highly accurate image of the patient’s vascular anatomy even if the patient moves. Surgeons can pinpoint blood vessels for inserting guide wires with an accuracy better than 1/5 of a millimeter.

“This technology allows the CT imaging to be superimposed on the fluoroscopic image and it allows the surgeon to see the image in 3D so that when he or she is trying to do a manipulation, it’s much faster,” says Dr. Shortell. Chief of Vascular and Endovascular Surgery. “Any time you can reduce operative time, it’s safer for the patient.”

CYDAR imaging has reduced operative time for EVAR cases by approximately one hour, says Dr. Shortell. This shorter time in the OR means a decreased risk of radiation exposure for both the patient and OR staff. Radiation can cause severe complications, including cancer, eye damage, infertility, and skin damage. In a recent clinical trial, CYDAR imaging reduced X-ray screening time by almost 33%.

Compared with other imaging modalities, CYDAR imaging requires a smaller amount of ionised contrast during fluoroscopy. Contrast can damage the kidneys and lead to renal insufficiency in patients, known as contrast-induced nephropathy. Recent findings from the CYDAR Infrarenal Endovascular Aneurysm Repair trial indicated a 50% reduction in contrast during fluoroscopy.

Dr. Shortell says the more complex the procedure, the more benefit to the patient. CYDAR imaging is especially helpful in cases that require a custom-made fenestrated stent-graft with holes for the renal arteries.

In addition to improving patient safety, this faster procedure time means a shorter hospital stay and reduced costs for patients.

Dr. Shortell envisions wider applications of the technology for any procedure that uses 3D imaging.

“We will use CYDAR imaging in our other hybrid OR for patients undergoing heart surgery. This technology can theoretically be used for any sort of procedure that is done in 3D, including treatment for cancer, so it doesn’t have to be limited to blood vessels.”

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In collaboration with Duke Medicine Global, Duke Weight Loss Surgery has formed a unique partnership with Shanghai Pudong Hospital, part of Fudan University, in China to share their knowledge and expertise in bariatric surgery. Dr. Dana Portenier, Chief of the Division of Metabolic and Weight Loss Surgery, says the seeds for this initiative were planted in 2007 during his visit to the country’s first diabetes surgery conference.

“China has a large population of individuals with diabetes, and the country is now ranked in the top 5 in obesity worldwide,” says Dr. Portenier. “Shanghai Pudong Hospital approached us and wanted to create a weight loss center here. They really got to understand us,” says Dr. Portenier.

Huang says this endeavor is a prime example of how Duke can effect change in healthcare, not just locally, but worldwide.

“This type of collaboration can benefit Duke Health by helping to achieve our mission of improving the health imbalance between our country and the world,” says Dr. Portenier. “We’ve gone out of their way to take us around and show us their way of life and some of their culture so we really got to understand them,” says Dr. Portenier.

Most importantly, this partnership has forged friendships between faculty and staff and afforded a unique opportunity to learn about other cultures. “We’ve made some pretty good friends over there. They’ve gone out of their way to take us around and show us their way of life and some of their culture so we really got to understand them,” says Dr. Portenier.

In addition to creating the infrastructure at Shanghai Pudong, Duke weight loss surgeons provided hands-on surgical training. Dr. Portenier says one of the highlights was when they performed China’s first duodenal switch in October 2016. This complex procedure involves the removal of 70% of the stomach and most of the duodenum, which results in an 85% rate of remission in diabetes patients.

According to the American Society for Metabolic and Bariatric Surgery, bariatric surgery improves type 2 diabetes in nearly 90 percent of patients and causes remission in 78% by lowering blood sugar, reducing the need for diabetes medication, and improving diabetes-related health problems.

Duke surgeons saw a unique educational opportunity in China and reached out to Duke Medicine Global to begin a bariatric surgery improvement project at Shanghai Pudong Hospital in 2014. Dr. Portenier and his team, along with Arthur Huang from Duke Medicine Global, visited the hospital to review their program and provide 108 short- and long-term recommendations regarding facilities, personnel, and clinical processes related to bariatric and metabolic surgery to bring their healthcare up to Duke standards. These guidelines, for instance, included purchasing equipment to accommodate heavier patients, such as larger chairs in the waiting room, X-ray equipment to diagnose postoperative complications, and safety mats.

A patient safety team consisting of members from Duke University Hospital and Duke Medicine Global conducted several follow-up visits to assess progress. Following the implementation of the recommended best practices, the hospital received accreditation from the Joint Commission International (JCI), the international accrediting association for surgery programs.

“That was quite an achievement in China,” says Huang. “Shanghai Pudong Hospital achieved one of the highest scores of JCI in China back then.”

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As a visiting professor in China 10 years ago, thoracic surgeon Dr. Thomas D’Amico introduced a novel surgical procedure that was showing tremendous benefits in cancer patients back home at Duke University Medical Center.

For over 20 years, Dr. D’Amico, Gary Hock Professor of Surgery, Division of Cardiovascular and Thoracic Surgery, has pioneered the use of video-assisted thoracoscopic surgery (VATS) lobectomy to treat lung and esophageal cancer, a minimally invasive method that uses a minimized video camera inserted via small incisions to visualize the chest cavity. Developed in the 1990s, thoracoscopic lobectomy obviates the need for large incisions in the chest and rib retraction to access the chest cavity, which results in less pain and a quicker recovery time for patients.

However, this technique is highly complex and requires the surgeon to have a high level of expertise. In a reciprocal effort, Duke annually hosts visiting teams from Shanghai Pudong for an observership program and surgical training. In addition, the leadership team has visited Duke to participate in a health leadership and hospital training program, which includes meetings with Duke Hospital leadership, hospital tours to see the facilities, and lectures, all to empower their hospital leaders with knowledge.

This ongoing collaboration between Duke and Shanghai Pudong has led to the creation of an educational conference in weight loss surgery called the Joint Duke–Pudong Bariatric Conference, and three conferences have been held to date.

“China has a large population of individuals with diabetes, and the country is now ranked in the top 5 in obesity worldwide,” says Dr. Portenier. “Shanghai Pudong Hospital approached us and wanted to create a weight loss center here. They really got to understand us,” says Dr. Portenier.

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“This type of collaboration can benefit Duke Health by helping to achieve our mission of improving the health imbalance between our country and the world,” says Huang. “There are a lot of opportunities like this for global partnership that can enable Duke to connect with the world.”

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Duke Surgery is dedicated to training surgeons using the latest surgical techniques and innovative approaches in minimally invasive surgery, microsurgery, and robotic surgery. Utilizing a combination of didactic lectures, live surgeries, video, and hands-on labs, hundreds of surgeons and allied health professionals from around the world have been trained at Duke Surgery. CME credit is available for a number of courses held throughout the year in a wide range of surgical specialties. Following are upcoming Duke Surgery advanced educational courses. For a complete list of all of Duke Surgery’s educational initiatives, visit innovation.surgery.duke.edu/courses.

**Duke Tuesday in Urology**  
November 7, 2017  
Durham, NC

**Duke Tuesday in Urology**  
February 13, 2018  
Durham, NC

**Duke Urologic Assembly & Urologic Cancer Symposium**  
April 5–8, 2018  
Hilton Head, SC

**Duke Masters of Minimally Invasive Bariatric Surgery**  
June 2–4, 2018  
Orlando, FL

**Duke Masters of Minimally Invasive Thoracic Surgery**  
September 20–22, 2018  
Orlando, FL

Singapore has established an efficient and widespread system of healthcare that is considered to be one of the best in the world. At Singapore General Hospital, the largest hospital in the country, the Surgery Academic Clinical Program (ACP) collaborates with the Department of Surgery at Duke in an exchange of medical knowledge, insight, and research.

Duke’s partnership with Singapore General began in 2005, with the foundation of the Duke–National University of Singapore Medical School. In a biomedical sciences initiative, Singapore sought an international partner with a strong history in research and education to offer students innovative medical educational experiences. Since its inception, the Duke–NUS has enrolled over 500 students from over 25 countries, the first U.S.-style medical school in Singapore.

Similar to the strong connections that exist between Duke University Medical Center and the University itself, Singapore General Hospital’s campus offers a training ground for Duke-NUS students. As a campus that combines innovative medical research with training and education, the hospital and its Surgery ACP offer valuable insight to Duke Surgery.

“Through discussions between our department and the Surgery ACP at Singapore General, we have begun to learn each other’s strengths,” says Dr. Allan D. Kirk, Chair of the Duke Department of Surgery. “Our collaboration has allowed us to better understand different patient populations, in an effort to shift educational paradigms as we prepare today’s surgeons with a global mindset.”

Dr. Kirk says one area that particularly benefits from the partnership is cancer research, as risk factors for breast cancer and hepatocellular carcinoma vary greatly depending on patient population. Dr. Tan Hiang Khoon, Chair of the Surgery ACP at Singapore General, shares Dr. Kirk’s enthusiasm for the partnership between the two departments.

“There is tremendous opportunity for synergistic collaboration between the Department of Surgery in Duke and SGH,” says Dr. Tan. “Over the last few years, we have had a steady flow of bilateral faculty visits which cemented the close relationship between our two departments.”

At a medical center that meets the needs of half of the population of the country, Dr. Tan says the patient population of SGH is an ethnic mix from Singapore as well as South and Southeast Asia. This population is very different from that of Durham.

“This diversity of patient mix presents a unique opportunity to understand disease phenotype in diverse populations, and therefore offers immense potential for research collaboration,” Dr. Tan says.

The goals of the Duke School of Medicine and Duke-NUS Medical School align not only to foster educational growth, but to offer opportunity for students to become clinical leaders.

In an effort to capitalize on this unique opportunity, the two medical schools are creating a resident exchange program which will offer first-hand experiences with different patient groups. The program will hopefully begin within 2 years and will further the department’s goal of training physicians to become global leaders.

Tan Hiang Khoon, MD (third from left), and his academic team during their visit to Durham in early 2017.
For new interns entering general surgery, it is not surprising that they are expected to confidently operate and take care of surgical patients right from the very first day of their residency. However, studies indicate that a large majority of graduating medical students often feel unprepared to fulfill their new clinical duties.

In 2014, several surgical associations recognized this problem and issued a joint statement encouraging all medical schools to provide their graduating students better and more surgery-specific preresidency preparatory courses. Currently, this type of course is only offered in one-third of U.S. medical schools, and, prior to this year, Duke remained as one of the other two-thirds of schools without a surgical preparatory curriculum.

Now, thanks to the support of the Department of Surgery, Duke medical students can receive hands-on surgical training in the Surgery Technique and Review (STAR) Intern course.

“They were able to practice their teaching skills and autonomy throughout the course and the extent of their responsibilities. The lab safely allows students to act as operating surgeons and allows them to get hands-on operative experience. From first incision to final closure, students remove gallbladders, repair hernias, and sew together blood vessels.”

Most important, students learn both assistance skills and autonomy throughout the course and the extent of their responsibilities. The lab safely allows students to act as operating surgeons and allows them to get hands-on operative experience. From first incision to final closure, students remove gallbladders, repair hernias, and sew together blood vessels.

“STAR was undoubtedly the best preparation I’ve had for a career in surgery,” says Trey Sinyard, recent Duke MD candidate and STAR course participant. “This transition requires a level of organization way beyond what is necessary to be a successful medical student.”

Plans are already under way for next year’s STAR Intern course set for the spring of 2018. For any faculty, staff, or residents interested in helping teach the next generation of surgeons, please email Justin Barr (PGY-3) at justin.barr@duke.edu for more information or to volunteer.

“Like our peer institutions, we wanted to address this need and take accountability of our graduating medical students,” says Dr. Shanna Sprinkle, General Surgery Resident and STAR course instructor. “Duke is a place known for training excellent residents and future surgeons. Now we have a formal way of extending that same quality and excellence in training to our medical students.”

Third- and fourth-year medical students are thrilled about the new 2-week elective. Although similar courses at peer institutions only include fourth-year students, the Duke STAR Intern course is unique in that any interested upper level medical student can participate. The first class of STAR students noted how much they enjoyed this arrangement, and as the fourth-years were able to practice their teaching and the third-years benefitted from the peer knowledge and experience shared with them by the graduating class. For the third-years, the advice comes at a crucial time as they start their sub-internships and residency applications this fall.

“As Duke’s first surgery-specific preparatory course for graduating medical students, the STAR Intern course is crafted to prepare future surgeons for real challenges.”

“One challenge of intern year is having to focus on all the minor details of patient care that just get glossed over as a medical student,” says Justin Rucker, MD candidate and STAR course participant. “The curriculum identified major areas for growth in my knowledge base and technical abilities, prepared me for the next step into surgical internship, and helped to craft intentions for the trajectory of my entire residency.”

-Trey Sinyard, MD
Collaborating on Kidney Care

Moving from treatment to prevention of kidney stone disease

Research being conducted by the Urinary Stone Disease Research Network (USDRN) will have an impact on 1 in 11 Americans suffering from urinary stone disease, more commonly known as kidney stones.

The Duke Clinical Research Institute (DCRI) run and organize clinical trials, while investigators at Texas Southwestern Medical Center, the Hospital of Philadelphia, the University of Pennsylvania, Children’s Kidney Diseases, part of the National Institutes of Health, many experts are part of the Network, including adult and pediatric urologists, adult and pediatric nephrologists, pediatricians, emergency department physicians, clinical trialists, nutritionists, behavioral scientists, and radiologists.

The USDRN also comprises clinical sites at the University of Pennsylvania Children’s Hospital of Philadelphia, the University of Texas Southwestern Medical Center, the University of Washington, and Washington University in St. Louis. Investigators at DCRI run and organize clinical trials, analyze the data, and provide scientific expertise regarding study design.

Chuck Scales, MD, Associate Professor of Surgery, Division of Urology, is the research center’s principal investigator. “Our hope is that the network will achieve a greater understanding of how to reduce the burden of stone disease for people who have it, improve our ability to prevent kidney stones, and further the science and understanding of kidney stone disease,” says Dr. Scales.

To achieve these goals, the Network will conduct a randomized trial focused on adherence to fluid consumption as a way to prevent kidney stone disease, increase understanding of and mitigate the burden of ureteral stone-associated symptoms, and establish a repository of biologic specimens for future studies.

Most therapies treat patients with kidney stones only after they are in excruciating pain. The Network, committed to addressing the dearth of high-quality research on how to prevent stones, recently began recruiting participants for its first randomized trial. The two-year clinical trial, known as the Prevention of Urinary Stones with Hydration study, or PUSH, will enroll 1,642 participants to determine whether using a high-tech water bottle and encouraging people to drink more water, and therefore urinate more, will reduce the recurrence of urinary stone disease.

“The PUSH trial is very innovative,” says Dr. Scales. “We’re using a commercially available ‘smart’ water bottle which automates tracking of fluid consumption.” The bottle syncs to an app that monitors fluid intake and empowers individuals to form new habits with a combination of financial incentives and behavior interventions. Dr. Scales says that financial incentives have been shown to help people change adherence behaviors.

“We’re also providing structured problem solving, which is a form of health coaching that allows participants to identify barriers that prevent them from drinking the right amount of fluids and creating a plan to address those barriers,” he says.

“My hope is that through this research network, we can focus on stone prevention, and empower patients to make the necessary lifestyle changes to avoid recurrent kidney stones,” says Dr. Scales.

Duke Researchers Will Lead $12 Million, 5-Year Study to Test Novel Therapies that Aim to Eliminate Asymptomatic, Low-Grade Kidney Stones

Duke researchers will lead a $12 million, 5-year study to test novel immunosuppressive drugs following transplantation.

“We are extremely grateful to the National Institutes of Health for funding work that will focus on developing more effective therapies to allow transplantation in patients with immunologic barriers,” says Dr. Stuart Knechtle, Director of the Duke Transplant Center and principal investigator of the study.

For the tens of thousands of patients suffering from end-stage organ failure, organ transplantation is a lifesaving and health-extending therapy. However, transplant recipients must take some form of immunosuppression for the rest of their lives to prevent organ rejection.

Long-term immunosuppressive therapy is associated with severe side effects in transplant recipients, including cardiovascular disease, infection, and cancer. These drawbacks have driven the search for therapies that create a “tolerant” immunological state in which the patient’s immune system accepts a donor organ without mounting an immune response against the graft, known as immune tolerance.

In this study, Dr. Knechtle and colleagues will assess the role of depletional therapy as a strategy to induce immune tolerance following organ transplantation.

Depletional therapy conditions a patient’s immune system for transplant by wiping out B cells and antibodies, essentially rebooting the immune system to provide a welcoming, nonreactive environment for a donor organ. Currently, depletional therapy is used with the ultimate goal of phasing out long-term immunosuppression following transplantation and how induction therapy influences the immune repertoire.

The second part of the study will focus on defining the effect of depletional therapy on the immune repertoire in sensitized transplant recipients, or recipients with antibodies that may attack a donor organ. Using desensitization therapies, the researchers aim to prep the immune repertoire to recognize the transplanted organ as one of its own.

The researchers hope that the study findings will lead to improved therapies for patients undergoing organ transplants with the ultimate goal of phasing out long-term immunosuppression from treatment protocols.

“We have wonderful scientists at Duke who will use these funds to grow our understanding of immunity and how it can be modified to promote the health of transplant patients,” says Dr. Knechtle.

National Institutes of Health grant will fund research to develop safer, more effective therapies for patients undergoing organ transplants

The researchers will assess novel depletional therapies in a nonhuman primate model of kidney transplantation. The first part of the study will focus on understanding the impact of depletional induction on immunosuppression following transplantation and how induction therapy influences the immune repertoire.
Surgery Research Grant Activity

Dawn E. Bowles, PhD, Assistant Professor of Surgery, Division of Surgical Sciences, received a grant from Heartware, Inc. for “Genotyping for Stroke Risk in the USA Patient Population.” Additionally, Dr. Bowles received a grant from Krestiny Pharmaceuticals Inc. for “Protection from cardiac ischemic injury through use of EFS44.”

Gayathri R. Devi, PhD, Associate Professor in Surgery, Division of Surgical Sciences, received a grant from the Department of Defense for “Characterization of Tumor Immunobiological Factors that Promote lymphovascular Invasion and Dissemination in Locally Advanced Breast Cancer.”

Susan D. Emmett, MD, MPH, Assistant Professor of Surgery, Division of Head and Neck Surgery & Communication Sciences, received a grant from the Norton Sound Health Corporation for “Addressing childhood hearing loss disparities in an Alaska Native population: A community randomized trial.”

David H. Harpole Jr., MD, Professor of Surgery, Division of Cardiovascular and Thoracic Surgery, received a grant from the Department of Defense for “Military Exposure-Related Pleural Mesothelioma: An Innovative Translational Approach to Inform Novel Molecular-Targeted Treatment Development.”

Zachary C. Hartman, PhD, Assistant Professor of Surgery, Division of Surgical Sciences, received a grant from Merck for “Mechanisms of Resistance and to PD-1 Immunotherapies in Breast Cancer.” Additionally, Dr. Hartman received a grant from the Susan G. Komen Breast Cancer Foundation for “Immunotherapeutic Targeting of a Therapy Resistant Oncogenic HER2 Isomor.”

Matthew G. Hartwig, MD, Associate Professor of Surgery, Division of Cardiovascular and Thoracic Surgery, received a grant from Torah Medical Inc. for “LUNK After Lung Transplantation.”

Brant A. Inman, MD, Associate Professor of Surgery, Division of Urology, received a grant from Combat Medical for “Pig Bladder Hyperthermia Testing Device.”

Allan D. Kirk, MD, PhD, Chair and Professor of Surgery, Division of Abdominal Transplant Surgery, received a grant from Quadriga Biomedical Sciences, Inc. for “Mouse Heart Transplant.”

Stuart J. Knechtel, MD, Professor of Surgery, Division of Abdominal Transplant Surgery, received a grant from the National Institutes of Health for “The Risks and Opportunities of Homoeostatic Response.”

Alexander T. Limkakeng Jr., MD, MHS, Associate Professor of Surgery, Division of Emergency Medicine, received a grant from the Emergency Medicine Foundation for “Systematic Molecular Profiling for Differentiation of Myocardial Ischemia in the Emergency Department.”

Justin J. Pollara, PhD, Assistant Professor in Surgery, Division of Surgical Sciences, received a grant from the National Institutes of Health for “Combined Hepatitis B and HIV-1 envelope vaccination to augment T cell help via linked recognition of unrelated antigens.”

Joshua C. Snyder, PhD, Assistant Professor of Surgery, Division of Surgical Sciences, received a grant from the National Institutes of Health for “Establishing the molecular and cellular mechanisms of Lgr5 signaling for controlling cancer stem cell behavior.”

Julie Ann Sosa, MD, Professor of Surgery, Division of Advanced Oncologic and Gastrointestinal Surgery, received a grant from Cell Microsystems, Inc. for “Automated isolation of single cells using high-resolution and sub cellular sampling.”

PUBLICATIONS IN HIGH IMPACT FACTOR JOURNALS

*AACT/AAS/ASA/ASNC/SSC/SCCT/STS 2017 Appropriate Use Criteria for Coronary Revascularization in Patients With Stable Ischemic Heart Disease.


Human Epistatic Interaction Controls IL7R Splicing and Increases Multiple Sclerosis Risk.


What Can Molecular Diagnostics Add to Locoregional Treatment Recommendations for UC?


Fibroblastic niches prime T cell alloimmunity through Delta-Notch ligands.


Trends in Thyroid Cancer Incidence and Mortality in the United States, 1974-2013.


PD-L1 serves as a double agent in separating GVL from GVHD.


Complete Deletion or Observation for Sentinel-Node Metastasis in Melanoma.


Pentavalent HIV-1 vaccine protects against simian-human immunodeficiency virus infection challenge.


Partial efficacy of a broadly neutralizing antibody in combination with cell-associated SHIV infection.


* Journals with an Impact Factor greater than 10.0.

CLINICAL TRIALS

Joseph B. Borawski, MD, Assistant Professor of Surgery, Division of Emergency Medicine, received a grant from BMS for “A Multicenter, Randomized, Double-Blind, Parallel-Group, Placebo-Controlled, Dose-Ranging, Phase 2b Study of the Safety and Efficacy of Continuous 48-Hour Intravenous Infusions of BMS-986231 in Hospitalized Patients with Heart Failure and Impaired Systolic Function.”

Mani A. Daneshmand, MD, Assistant Professor of Surgery, Division of Cardiovascular and Thoracic Surgery, received an award from AcriCure for “Convergence of Epicardial and Endocardial RF Ablation for the Treatment of Symptomatic Persistent AF.”

Scott T. Hollembec, MD, Associate Professor of Surgery, Division of Plastic, Maxillofacial, and Oral Surgery, received a grant from DoTerra for “Effects of Lavender Oil on Postoperative Pain, Sleep Quality and Mood.”

Brant A. Inman, MD, Associate Professor of Surgery, Division of Urology, received a grant from Genentech for “A Phase Ib/Ii, Open-Label Study of the Safety and Pharmacology of Atezolizumab Administered with or without Bacille Calmette- Guérin in Patients with High Risk Non-Muscle-Invasive Bladder Cancer.” Additionally, Dr. Inman received an award from Nucleix for “The Efficacy of the Bladder EpCheck for Detection of Recurrent Urothelial Cell Carcinoma: A Multicenter, Prospective Blinded Pivotal Study.”

John Migaly, MD, Associate Professor of Surgery, Division of Advanced Oncologic and Gastrointestinal Surgery, received an award from Lifebond for “Efficacy and Safety of LifeSeal Kit for staple Line Sealing in Colorectal and Colonal Anastomoses: A Prospective Randomized Study.”

Thomas J. Polascik, MD, Professor of Surgery, Division of Urology, received an award from Molecular Insight Pharmaceuticals for “A Phase 3 Study to Evaluate the Safety and Efficacy of 99mTc-MIP-1404 SPECT/CT Imaging to Detecting Significant Prostate Cancer in Men with Biopsy Proven Lower Grade Prostate cancer who are Candidates for Active Surveillance (proSPECT-AS).”

Dana D. Portenier, MD, Assistant Professor of Surgery, Division of Metabolic and Weight Loss Surgery, received an award from Medsix for “Radiofrequency Energy Delivery to the Lower Epigasplheal Sphinicter (Stretcha Procedure) in Sleeve Gastroectomy Patients with GERD.”

J. Todd Purves, MD, PhD, Assistant Professor of Surgery, Division of Urology, received an award from Allergan for “Long-term Extension Study of BOTOX in the Treatment of Urinary Incontinence Due to Neuromuscular Detrusor Overactivity in Patients 5 to 17 Years of Age.”

Edward N. Rampersaud Jr., MD, Assistant Professor of Surgery, Division of Urology, received an award from Immunuc for “An open-label, randomized, controlled, multicenter, phase II study evaluating safety and efficacy of intratumorally administered Intuvax pre-nephrectomy followed by Sunlinb post-nephrectomy, compared to Sunlinb post-nephrectomy in metastatic renal cell carcinoma patients.”

Debra L. Sudan, MD, Professor of Surgery, Division of Abdominal Transplant Surgery, received an award from Astellas Pharma Global Development, Inc., for “A Phase 2a, Randomized, Open-Label, Active Control, Multi-Center Study to Assess the Efficacy and Safety of Bleselumab in Preventing the Recurrence of Focal Incomplete Congenital Glomuvenouslcosis in de novo Kidney Transplant Recipients.”

Julie K. M. Thacker, MD, Associate Professor of Surgery, Division of Advanced Oncologic and Gastrointestinal Surgery, received an award from Cohera Medical for “A Pilot, Prospective, Randomized, Controlled, Multicenter Technical Feasibility Clinical Study Comparing Standard Anastomosis Closure Technique to Standard Closure Techniques Plus Syflex® Surgeon Sealant.”
The Duke Department of Surgery is pleased to announce the appointment of Suresh K. Agarwal Jr., MD, as the new Chief of the Division of Trauma and Critical Care Surgery. Dr. Agarwal comes to Duke from the University of Wisconsin School of Medicine and Public Health where he has served as Chief of the Division of Trauma and Acute Care Surgery and Chief of Trauma Services. His other roles at the University of Wisconsin have included Program Director of the Surgical Critical Care and Acute Care Surgery Fellowship, Medical Director of Trauma, and Staff Surgeon at William S. Middleton Memorial Veterans Hospital.

“We are thrilled to welcome Dr. Agarwal to the Department of Surgery,” says Dr. Allan D. Kirk, Chair of the Department of Surgery. “Dr. Agarwal is a superb surgeon, and has had spectacular success in growing a robust trauma, critical care, and emergency general surgery program at the University of Wisconsin. Through his work in Madison, he has clearly distinguished himself as a surgical leader of national caliber. He also has the vision to bring Duke’s program to the leader of national caliber. He also has the vision to bring Duke’s program to the next level academically, and I believe our vision to bring Duke’s program to the leader of national caliber. He also has the vision to bring Duke’s program to the next level academically, and I believe our

Dr. Agarwal received his medical degree from the University of Pittsburgh, followed by his residency at the Hospital of Satin Raphael in New Haven, Conn. He completed a fellowship in Trauma Surgery at Hartford Hospital, a fellowship in Surgical Critical Care at the University of Connecticut, and a fellowship in Thoracic Surgery at the University of Wisconsin. Dr. Agarwal is board certified in General Surgery and Surgery Critical Care, specializing in emergency surgery, laparoscopic surgery, lower and upper GI surgery, chest wall stabilization, hernia surgery, resuscitation, trauma, and wound healing. He serves as principal investigator on several grants funded by the National Institutes of Health, the National Trauma Institute, and the Department of Defense. Dr. Agarwal will take the reins as Division Chief from Dr. Cynteha Shortell. Says Dr. Kirk, “Dr. Shortell has done a masterful job in her interim leadership role over the past year, putting the Division on solid footing and paving the way for Dr. Agarwal to launch his vision from a position of strength.”

“I am grateful to Drs. Kirk and Shortell, the members of the search committee, and the Duke Community for the opportunity to work with the members of the Division of Trauma and Critical Care Surgery,” says Dr. Agarwal. “I look forward to joining the environment of hard work and collegiality that Drs. Shortell and Steven Vaslef have established. By working together, I hope that we will be successful and join the rest of the Department of Surgery in making outstanding clinical, educational, and research contributions at the regional, national, and international levels.”

“Dr. Agarwal is a superb surgeon, and has had spectacular success in growing a robust trauma, critical care, and emergency general surgery program. He has clearly distinguished himself as a surgical leader of national caliber.”
- Dr. Allan D. Kirk

NEW FACULTY

GEORGIA M. BEASLEY, MD, MHS
Assistant Professor of Surgery, Division of Advanced Oncologic and Gastrointestinal Surgery
Clinical interests include the surgical care of patients with melanoma, skin cancers, soft tissue cancers, and other general surgical oncology. Research interests include utilizing novel treatments for melanoma through appropriately designed clinical trials and understanding the interactions of the immune system with cancer and how the immune system might be manipulated to fight cancer.

DAVID A. BROWN, MD, PhD
Assistant Professor of Surgery, Division of Plastic, Maxillofacial, and Oral Surgery
Clinical interests include head-to-toe reconstructive surgery after trauma, cancer, infection, and congenital disorders. Research interests include regenerative medicine and wound healing and breast cancer. Current research projects include genetic approaches to skin regeneration in zebrafish, development of a bioengineered dermal substitute, adipose-derived stem cell therapies, and tissue engineering models for the study of lymphovascular invasion in breast cancer.

SUSAN D. EMMETT, MD, MPH
Assistant Professor of Surgery, Division of Head and Neck Surgery & Communication Sciences
Clinical and research interests include reducing hearing health disparities globally, working to define the global burden of hearing loss, and understanding its social, economic, and health impact. Current research focuses on expanding access to cochlear implantation, a treatment for severe-to-profound hearing loss traditionally limited to high-resource settings.

SEAN P. MONTGOMERY, MD
Assistant Professor of Surgery, Division of Trauma and Critical Care Surgery
Clinical interests include the surgical treatment of abdominal emergencies, from either trauma or some type of infectious problem, bowel obstructions, hernias, diverticulitis, cholecystitis, and appendicitis.

JOSEPH TUREK, MD
Associate Professor of Surgery, Division of Cardiovascular and Thoracic Surgery
Clinical interests include total beating-heart technique for the nonwork operation, beating-heart modified aortic root advancement for infants with aortic arch hypoplasia, minimally invasive approaches, and the entire spectrum of aortic root operations. Research interests include elucidating novel mechanisms that lead to aortopathy and cardiomyopathy in patients with connective tissue diseases, such as Marfan’s syndrome.

TAMARA NDI FITZGERALD, MD, PhD
Assistant Professor of Surgery, Division of Pediatric General Surgery
Clinical interests include surgical problems in the neck, chest and abdomen, such as congenital anomalies, childhood cancers, pectus excavatum, lung abnormalities, hernias, and intestinal problems. Research interests include global surgery, focusing on training and supporting surgeons in sub-Saharan Africa and finding creative ways to increase children’s access to surgery in low-income areas.

THOMAS A. LONGO, MD
Assistant Professor of Surgery, Division of Urology
Clinical interests include urologic oncology, including minimally invasive surgical techniques, investigating therapeutic hyperthermia in bladder cancer, comparative oncology in bladder cancer (canine and human), and alternate RNA splicing in prostate cancer.

ADAM R. WILLIAMS, MD
Assistant Professor of Surgery, Division of Cardiovascular and Thoracic Surgery
Clinical interests include heart surgery, including cutting-edge therapies to treat all aspects of heart disease, ranging from minimally invasive transcatheater valve replacement to traditional bypass surgery to life-sustaining extracorporeal membrane oxygenation (ECMO) therapy. Research interests include stem cell therapy for heart disease.
FACULTY AWARDS

ANDREW S. BARBAS, MD  
Assistant Professor of Surgery, Division of Abdominal Transplant Surgery, received the 2017 ASTS-Astellas Faculty Development Grant at the 2017 American Transplant Congress in Chicago.

GAYATHRI R. DEVI, PhD  
Associate Professor in Surgery, Division of Surgical Sciences, has been elected to the Board of Directors for the Association for Clinical and Translational Science. Dr. Devi also received a Duke AHEAD Supporting Health Professions Educators (DASHE) award.

BRANT A. INMAN, MD  
Associate Professor, Division of Urology, was selected by the Center for Scientific Review to participate in the Cancer Immunopathology and Immunotherapy study section this past June in Bethesda, Maryland.

DAWN E. BOWLES, PhD  
Assistant Professor of Surgery, Division of Surgical Sciences, was selected for NASA’s Space Radiation Summer School at the Brookhaven National Laboratory.

LINDA C. CENDALES, MD  
Assistant Professor of Surgery, Division of Plastic, Maxillofacial, and Oral Surgery, has received the Joseph Moylan Founder’s Award from the Durham Nativity School.

RACHEL GREENUP, MD, MPH  
Assistant Professor of Surgery, Division of Head and Neck Surgery & Communication Sciences, has been selected as a TED Fellow, joining a class of 20 from around the world who each delivered a talk this past August in Arusha, Tanzania. Dr. Emmett is the first otolaryngologist to be named a TED Fellow.

HARVEY G. MOORE III, MD  
Assistant Professor of Surgery, Division of Otolaryngology and Communication Sciences, has been appointed to the Editorial Board of the journal Diseases of the Colon and Rectum. Dr. Moore will serve as an Associate Editor for the journal.

JUDD W. MOUL, MD  
Professor of Surgery, Division of Urology, has been reappointed as Membership and Bylaws Committee Chair for the American Joint Committee on Cancer.

JULIE ANN SOSA, MD  
Professor of Surgery, Division of Advanced Oncologic and Gastrointestinal Surgery, has been appointed Editor-In-Chief for the World Journal of Surgery. Dr. Sosa’s appointment begins in January 2018.

CATHARINE A. STATON, MD  
Assistant Professor of Surgery, Division of Emergency Medicine, has been selected as the American Association for Thoracic Surgery. Dr. Staton was promoted to Associate Professor in Surgery.

ALISON S. CLAY, MD  
Assistant Professor of Surgery, Division of Trauma and Critical Care Surgery, has received the Practice Course Professionalism Award from second-year medical students, for exceptional professional behavior in the clinical setting.

MATTHEW G. HARTWIG, MD  
Associate Professor of Surgery, Division of Cardiovascular and Thoracic Surgery, has been elected into the Calculus Kinetics (R.O.C.K.) Society.

GLENN M. PREMINGER, MD  
Professor of Surgery, Division of Urology, received the Lifetime Achievement Award from the Research on Women’s Health meeting in October. Dr. Greenup will discuss the financial burden of breast cancer treatment.

DEBORA L. TUCCI, MD  
Professor of Surgery, Division of Head and Neck Surgery & Communication Sciences, has received the 2017 ASTS-Astellas Surgery, Division of Urology, has been appointed to the Editorial Board of the journal Diseases of the Colon and Rectum. Dr. Moore will serve as an Associate Editor for the journal.

BETTY C. TONG, MD  
Associate Professor of Surgery, Division of Cardiovascular and Thoracic Surgery, has been appointed to the Editorial Board of the journal Diseases of the Colon and Rectum. Dr. Moore will serve as an Associate Editor for the journal.

TRACI LYNN THOUREEN, MD, MHS  
Division of Emergency Medicine, was promoted to Associate Professor of Surgery.

MOOL, MD  
Professor of Surgery, Division of Urology, has been reappointed as Membership and Bylaws Committee Chair for the American Joint Committee on Cancer.

GARY M. STATON, MD  
Assistant Professor of Surgery, Division of Emergency Medicine, has been selected as the American Association for Thoracic Surgery. Dr. Staton was promoted to Associate Professor in Surgery.
MISSION

Through sustainable, multidisciplinary teams we:

- Provide insight regarding the fundamental nature of patient health and disease
- Empower all patients, trainees, and colleagues with knowledge
- Provide safe and high-quality care based on an advanced understanding of and respect for our patients’ needs and guided by best practices

VISION

Duke Surgery: United, for All Patients

PARTNERS IN PHILANTHROPY

A gift to the Duke Department of Surgery is a gift of knowledge, discovery, and life. Every dollar is used to further our understanding of surgical medicine, to develop new techniques, technology, and treatments, and to train the surgeons and researchers of the future.

If you would like to make a philanthropic investment in Duke Surgery, please contact Marcy Romary, Senior Major Gifts Officer, with Duke Health Development and Alumni Affairs at marcia.romary@duke.edu or visit surgery.duke.edu/gift.

In memoriam

MARY BARTLETT
JEFFREY BURKE
KRISTOPHER HARRISON
CRYSTAL SOLLINGER