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Message from the Chair

Welcome to Duke! That you have chosen to dedicate your time to visit Duke and consider our program for your residency training indicates you are seeking a high-caliber experience that will prepare you for a rewarding career in academic surgery. That you have been selected for an interview should provide affirmation you have the capacity to excel in surgery, and both derive benefit from and contribute to the field. I am thus very glad that you are here, and hope that your visit will help you determine whether Duke is the best fit for you. Your choice of training program will define your career, and indeed, our choice of residents defines our institution. As such, this is an important decision for us both.

During your visit to Duke, you will have an opportunity to meet our residents and faculty, tour our facilities, and gain insights into our training philosophy. You will no doubt find both breadth and depth in the resources available to you; including state-of-the-art clinical operating and patient care facilities, comprehensive training and simulation venues; a well-organized, enthusiastic and dedicated educational faculty engaged in a comprehensive didactic curriculum; and an exceptionally developed and well-funded surgical research enterprise embedded within the larger environment of a world-class research university. The comprehensive offering of clinical, educational, and research platforms organized within a single institution makes Duke among the few institutions that can deliver on the promise to create future leaders in surgery, and it is my personal commitment to offer each trainee the opportunity to go beyond mere assimilation of the current standard, and aspire to define future paradigms.

I genuinely look forward to meeting each of you, learning what contribution you hope to make to the field of surgery, and determining how I can help you reach your career goals.

Sincerely,

Allan D. Kirk, M.D., Ph.D., F.A.C.S.
Professor and Chairman, Department of Surgery
Surgeon-in-Chief, Duke University Health System
Message from the Residency Program Director

I would like to welcome you on behalf of the Duke Department of Surgery and I am grateful for your interest in our General Surgery Residency Program. The decision on where to train in surgery represents the most important decision in the trajectory of a surgeon’s career. Formal clinical training as well as research into basic or translational medicine will predict success in obtaining competitive fellowships and academic positions.

The Department of Surgery at Duke’s primary goal is to provide an outstanding clinical and investigative program for students, residents, and faculty.

The clinical training program in general surgery is dedicated to providing comprehensive training in patient care and operative surgery. This encompasses the entire breadth of core general surgery and the general surgery subspecialties, which includes cardiothoracic, abdominal transplant, oncology, vascular, endocrine, colorectal, trauma, and pediatric surgery. The Duke General Surgery Residency Program offers diverse clinical settings for training and includes operative experiences at Duke University, Duke Raleigh, Duke Regional, and the Asheville/Durham Veteran’s Administration hospitals.

We have developed an exemplary and well-rounded educational program for residents in training. Formalized meetings include weekly conferences such as Grand Rounds, Deaths & Complications Conference, Chairman’s Rounds, and the Chief Resident Conference, which provide a curriculum geared toward both formal and self-directed learning. We also have integrated into the educational program a world-class simulation curriculum housed in the American College of Surgeons-accredited Simulation and Educational Activities Lab (SEAL) located in the medical school. Our simulation activities encompass the entire gamut of modalities including video/box trainers, fresh-tissue preparations, live animal studies, and cadaver experiences.

The cornerstone of the General Surgery Residency at Duke is the two-year research fellowship, typically integrated between the second and third clinical years. During these two years, our surgical residents begin a dedicated investigative experience designed to give each resident an opportunity to develop granular expertise in an area of their choosing. These can include basic or translational science projects, experiences in health services or clinical outcomes research, studies in global medicine, or indeed any thoughtfully conceived knowledge creation endeavor. Innumerable basic science opportunities exist not only in the Department of Surgery, but also across both the graduate and undergraduate campuses. There are also multiple dual-degree opportunities obtained via the Duke Clinical Research Training Program, the Fuqua School of Business, and the Duke Clinical Research Institute. The goal of this research experience is to create thought leaders in academic surgery at both an institutional and national level, and to provide each Duke resident with a concentrated expertise in their chosen field.
You should consider a number of factors when choosing a residency program and clearly one of the most important is the track record of the recent graduates. The training program is intentionally broad-based and has produced graduates with a wide variety of clinical and research interests. As you will find in the summaries enclosed, our graduates obtain access to the most highly sought-after academic jobs and specialty training fellowship programs, and make up a significant number of the chairs, chiefs, and program directors nationwide.

We are proud of our program and achievements, and we are honored that accomplished medical students like you have expressed interested in our residency. I hope that over the course of your interview experience you come away as excited as I am about our programs.

We encourage questions and hope you enjoy your visit.

Sincerely yours,

John Migaly, M.D.
Program Director
General Surgery Residency
About the Duke Department of Surgery

As one of the top surgery programs in the world, the Duke Department of Surgery is dedicated to providing unparalleled clinical care, conducting pioneering research, and training the next generation of leaders in clinical and academic surgery. Patients from all over the world seek treatment from its team of experts, who have access to the clinical standard in all surgical domains, as well as experimental procedures and specialized care that extends beyond the current offerings of most hospitals. This provides the best opportunity for each patient to gain their best clinical outcome, and as such attracts a patient population representing an exceptionally broad clinical spectrum from which the trainee can learn.

Since the 1930s, Duke Surgery has led the way in medical innovations. It established the nation’s first brain tumor program in 1937 and was one of the first U.S. institutions to successfully perform a kidney transplant nearly 30 years later. Duke surgeons were the first to treat avascular necrosis of the femoral head with a free vascularized fibular graft. More recently, in 2013, surgeons implanted a bioengineered vascular graft in a patient — a first-of-its-kind operation in the United States.

The Department of Surgery’s internationally recognized faculty is focused on making gains in basic, clinical, and translational research, and it has traditionally received more NIH funding than any other surgery department in the world. The faculty is also deeply committed to preparing tomorrow’s leaders for careers in surgery with the highest level of training and access to unique research and leadership training opportunities.

The Department currently provides attending surgical coverage at Duke University Hospital, Duke Regional Hospital, Duke Raleigh Hospital, and two VA hospitals: Asheville VA and Durham VA hospitals. The faculty maintains an exceptionally busy practice, conducting over 30,000 operative procedures per year. As the Triangle area is perennially one of the fastest growing communities in the United States, Duke continues to expand with new operative platforms and a growing clinical and research faculty. This robust clinical volume combined with remarkably competitive faculty members adept in acquiring grant funding has led to a fiscally solvent department. It is this solvency that allows the Department to continue its unwavering dedication to residency training both on the wards and in the laboratory.
Duke University Medical Center History

1891
Trinity College President John Franklin Crowell makes public a plan for starting a medical college with a teaching hospital at Trinity College.

1924
James B. Duke establishes The Duke Endowment and allocates part of his $40 million gift to transform Durham’s Trinity College into Duke University.

1925
James B. Duke makes an additional bequest to establish the Duke School of Medicine, Duke School of Nursing, and Duke Hospital, with the goal of improving health care in the Carolinas and nationwide.

1927
Construction begins on the medical school and Duke Hospital.

1929
Three thousand applicants apply to the new medical school. Seventy first- and third-year students are selected, including four women.

1930
Duke Hospital opens July 20, 1930, attracting 25,000 visitors.

Classes begin in hospital administration, dietetics, and medical technology on August 15.

Eighteen third-year and 30 first-year medical students begin classes on October 2.
Duke University Medical Center History (continued)

1931
The Duke School of Nursing’s first class of 24 undergraduate students begin classes on January 2.
The dedication ceremony for Duke Medical School and Duke Hospital is held on April 20.
The Private Diagnostic Clinic, Duke’s physician practice organization, is organized September 15.

1940
The first wing is added to Duke Hospital.
The 65th General Hospital is authorized as an affiliated unit of the Duke University School of Medicine on October 17.

1957
The Outpatient Clinic and Private Diagnostic Clinic as well as the Hanes and Reed private floors and operating rooms are opened.
The original medical school and hospital are renamed Duke University Medical Center.

1966
A new hospital entrance, the Woodhall Building, opens.

1980
The new $94.5 million, 616-bed Duke Hospital opens, bringing the total number of patient beds to more than 1,000.
Duke University Medical Center History (continued)

1998
The Duke University Health System (DUHS) — an integrated academic health care system serving a broad area of central North Carolina — is officially created as Duke establishes partnerships with Duke Regional Hospital, Raleigh Community Hospital, and other regional health care providers. DUHS today includes three hospitals, ambulatory care and surgery clinics, primary care medical practice clinics, home health services, hospice services, physician practice affiliations, managed care providers, and other related facilities and services.

2007
Future DUHS expansion includes the development of the Hospital Addition for Surgery (HAFS) building.

2009
DUHS moves forward with the construction of a dedicated, state-of-the-art cancer center and the new Duke Medicine Pavilion, a major expansion of surgery and critical care services at Duke University Hospital.

2012
On February 27, a new landmark opens its doors on Duke's medical center campus — the seven-story, 267,000-square-foot Duke Cancer Center. More than just a modern space, it's an environment designed to transform the experience of every patient welcomed inside. The center consolidates outpatient cancer services and clinical research from across the campus into a patient-centered, multidisciplinary facility. The building adjoins the current Morris Cancer Clinic and is equipped with, among other features, 140 examination rooms, 75 infusion stations, a pharmacy, and an outdoor garden terrace where chemotherapy patients can go while receiving their infusions.

2013
The Duke Medicine Pavilion at Duke University Hospital opens in June. The eight-floor, 608,000-square-foot pavilion includes 160 critical care rooms, 18 operating rooms, and an imaging suite. The operating suites feature the latest in surgical technologies, as well as intraoperative magnetic resonance and computed tomography (CT) imaging capabilities that enable greater real-time precision and safety in complex procedures. With Duke University Hospital having to turn more than 900 patients away the previous year due to lack of space, the newly created critical care beds were urgently needed. Also, the 64 new intermediate care beds allow for optimal transition of patients from intensive care beds to standard hospital rooms.

The expanded Duke clinical facilities also provide state-of-the-art training and education for the nearly 900 residents and fellows at Duke — one of the largest training programs in the United States.

This major expansion project follows several recent significant capital projects throughout Duke Medicine, including renovations at Duke Raleigh Hospital and Duke Regional Hospital, and the opening of several new clinics in Wake County (Brier Creek, Morrisville, Knightdale, and North Raleigh).
Duke Surgery Milestones

Duke has blazed trails in medicine for more than seven decades. Here's a sampling of Duke Surgery milestones:

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
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<tbody>
<tr>
<td>1936</td>
<td>Duke surgeon introduces ultraviolet lamps into operating rooms to kill airborne germs that cause postoperative Staph infections, dramatically reducing the number of infections and related deaths.</td>
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<tr>
<td>1937</td>
<td>Duke establishes nation’s first brain tumor program.</td>
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<tr>
<td>1955</td>
<td>Duke initiates children’s amputation clinic for prostheses and management as part of nationwide network.</td>
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<tr>
<td>1956</td>
<td>Duke becomes the first institution to use systemic hypothermia during cardiac surgery. This technique of cooling patients to less than 50 degrees Fahrenheit to minimize tissue damage during lengthy surgical procedures is now standard practice worldwide.</td>
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<tr>
<td>1965</td>
<td>Duke is one of the first institutions in the country to successfully perform a kidney transplant.</td>
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<td>1968</td>
<td>Duke cardiac surgeon performs first operation to treat Wolf-Parkinson-White Syndrome.</td>
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<tr>
<td>1969</td>
<td>Duke orthopaedic surgeon performs first total hip replacement in the South.</td>
</tr>
<tr>
<td>1971</td>
<td>Duke Comprehensive Cancer Center becomes one of the nation’s first cancer centers.</td>
</tr>
<tr>
<td>1972</td>
<td>Duke surgeons are the first to reattach a severed thumb more than eight hours after it was amputated.</td>
</tr>
<tr>
<td>1979</td>
<td>Duke surgeons are the first to treat avascular necrosis (AVN) of the femoral head with free vascularized fibular graft.</td>
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<tr>
<td>1982</td>
<td>Duke conducts first and only randomized trial comparing radical surgery to radiation for adenocarcinoma of the prostate gland.</td>
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<tr>
<td>1984</td>
<td>Duke surgeons perform first liver transplant in the state of North Carolina.</td>
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<tr>
<td>1992</td>
<td>Duke physicians perform the first lung transplant and the first heart/lung transplant in hospital history.</td>
</tr>
<tr>
<td>1993</td>
<td>The anti-HIV drug therapy (Fuzeon) is developed by Trimeris as a direct result of research conducted in the Duke Surgical Oncology Labs. Duke Endosurgery Center opens.</td>
</tr>
</tbody>
</table>
### Duke Surgery Milestones (continued)

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>Duke Human Fresh Tissue Lab opens.</td>
</tr>
<tr>
<td>2004</td>
<td>Duke Center for Translational Research is established.</td>
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<tr>
<td>2007</td>
<td>Duke Otolaryngology—Head and Neck specialty clinic opens in Raleigh, N.C.</td>
</tr>
<tr>
<td>2008</td>
<td>Duke's Surgical Education and Activities Lab receives accreditation by the American College of Surgeons as Comprehensive Education Institute.</td>
</tr>
<tr>
<td>2011</td>
<td>Duke Neurosurgery specialty clinic opens in Raleigh, N.C.</td>
</tr>
<tr>
<td>2012</td>
<td>Surgical Education and Activities Lab receives first in state robotic trainer.</td>
</tr>
<tr>
<td>2013</td>
<td>Duke surgeons implant first bioengineered blood vessel in the United States.</td>
</tr>
</tbody>
</table>
The rich history and high standards that bore Duke University are also deeply rooted within the Department of Surgery. Duke Hospital's first dean, Dr. Wilburt Davison, appointed a Johns Hopkins surgeon, Dr. J. Deryl Hart, to be professor of surgery and the first chairman of the department in 1930.

After stepping down as chairman in 1960, Dr. Hart served as president of Duke University. During his tenure as chairman, Dr. Hart expected faculty members to assume major clinical and teaching responsibilities and to pursue laboratory research. He recruited the founding members of the surgical faculty and established Duke's surgery residency. Dr. Hart is also credited with originating the use of ultraviolet radiation to control airborne infections in surgical operating rooms.

The emphasis Dr. Hart placed on achieving excellence in patient care and teaching by integrating research with development laid the foundation for an institution that remains one of the top medical centers in the country. His philosophy was central to the department's mission in 1930 and continues today. Under the leadership of the successive chairs — Drs. Clarence E. Gardner (1960–1964), David C. Sabiston Jr. (1964–1994), Robert W. Anderson (1994–2003), Danny O. Jacobs, (2003–2012), and Allan D. Kirk (2014–present) — the model system of integrating the fundamental missions of academic medical centers (patient care, education, research, and administration) was enhanced within the Department of Surgery at Duke. Dr. Gardner was Dr. Hart's first chief resident and continued on as a Duke faculty member after completing his surgical training.

Dr. David C. Sabiston Jr. completed medical school and surgical training at Johns Hopkins Hospital under the mentorship of Dr. Alfred Blalock. He distinguished himself in the field of cardiovascular diseases. Notable among his academic achievements were his pioneering work in the surgical management of coronary artery disease and, while at Duke, groundbreaking work in the diagnosis and management of pulmonary embolism. Dr. Sabiston will be remembered most for his profound effect on surgical education, both nationally and internationally. This is most evident when reviewing the list of successful graduates who have gone on to lead departments, divisions, and programs and whose portraits adorn the hallways outside of the department offices.
Dr. Robert W. Anderson followed Dr. Sabiston as chairman and returned to the site of his surgical training. Social and economic influences were rapidly altering academic medicine in 1994. Dr. Anderson, an accomplished cardiothoracic surgeon with additional training in business administration, successfully led a department seeded as the epitome of traditional education and training, research, and clinical excellence while addressing the major changes in practice reimbursement that had occurred. This leadership solidified Duke’s fiscal stature and has facilitated a continued dedication to a tri-partite mission of clinical, educational, and investigational achievement.

Dr. Jacobs was recruited to Duke in 2003, where he served as the David C. Sabiston Jr. professor and chair until October 2012. Dr. Jacobs currently is the executive vice president, provost, and dean of the School of Medicine at the University of Texas Medical Campus in Galveston. During his 10 years at Duke, Dr. Jacobs proved himself to be a highly effective leader, committed to the success of all three missions within the Department of Surgery. He left Duke in a good position for his successor to continue the legacy of excellence that is Duke Surgery.

Dr. Allan D. Kirk was named chair of the Department of Surgery at Duke University in May 2014. He also was named as the inaugural Surgeon-in-Chief for the Duke University Health System. Dr. Kirk received his M.D. from Duke University School of Medicine in 1987 and completed his Ph.D. in immunology at Duke in 1992. He completed his general surgery residency at Duke in 1995, and his multiorgan transplant fellowship at the University of Wisconsin in 1997. An accomplished scientist and surgeon, Dr. Kirk is recognized by his peers for his pioneering work in transplantation and for his outstanding ability to lead. Prior to returning to Duke, he served as a Commander in the United States Navy at the Naval Medical Research Institute, became the inaugural Chief of the Transplantation branch at the National Institutes of Health, and served as Vice Chair for Research for the Department of Surgery at Emory University. His commitment to rigorous education and training, innovative research, and the most advanced patient care make him an excellent leader for Duke Surgery.
Facilities

The Department of Surgery’s residency program gives students the opportunity to gain hands-on experience providing care for diverse populations and treating a wide range of conditions. With five world-class facilities, surgical residents can take advantage of valuable training opportunities, from pediatric through geriatric procedures, including comprehensive experiences in hepatobiliary surgery, transplantation, vascular surgery, and advanced laparoscopic procedures. The program includes experience in community and VA-based care, which is crucial for surgeons interested in academic careers. Residents become equipped with the knowledge and skills needed to be competitive in the workforce.

Duke University Hospital (DUH)
Consistently ranked as one of the top ten hospitals by U.S. News & World Report, the 989-bed Duke University Hospital is a tertiary and quaternary care hospital and Level I trauma center. On its 210 acres, it houses comprehensive diagnostic and therapeutic facilities that serve a multistate region, drawing patients routinely from the Carolinas, eastern Tennessee, southern Virginia, Georgia, and Florida. Many of its programs also attract patients from other national and international sites. The main hospital is complemented by a state-of-the-art ambulatory surgery center situated two blocks away. Recent additions to Duke Hospital continue to add operative capacity and the patient volume continues to grow, consistent with the booming population moving to the triangle area.

Duke Regional Hospital (DRH)
DRH is a 369-bed acute care hospital that has been serving the community’s health care needs since 1976. A comprehensive facility, it offers Duke surgical residents experience in inpatient, outpatient, surgical, and emergency care. The medical facility also features a level II intensive care nursery, the 30-bed Durham Regional Rehabilitation Institute, and the Davis Ambulatory Surgical Center. It also has a nine-bed coronary care unit and a 17-bed intensive care unit. Other training opportunities include the highly acclaimed Duke Bariatric Surgery and Advanced Laparoscopic programs.
Durham Veterans Administration Hospital (DVAMC)
This 274-bed general medical and surgical facility is located just across the street from Duke Hospital. The DVAMC provides general and specialty medical, surgical, psychiatric inpatient, and ambulatory services and is a major referral center for veterans in North Carolina, southern Virginia, northern South Carolina, and eastern Tennessee. In this capacity, the DVAMC accommodates veterans from these regions with complex general, vascular, and cardiothoracic needs and, in addition, serves local veterans requiring care for common general surgical disorders.

Asheville Veterans Administration Hospital (AVAH)
The Asheville VA Medical Center is a tertiary care, 112-bed acute care facility located in western North Carolina. Asheville VA operates a separate 120-bed Extended Care and Rehabilitation Center, serving the western North Carolina area and portions of South Carolina, Tennessee, and Georgia. General surgical residents rotating through AVAH gain additional experience in vascular surgery, general surgery, cardiac surgery, and endoscopy.

Duke Raleigh Hospital (DRAH)
This is a 148-bed general medical and surgical hospital in Raleigh. The Duke Raleigh rotation provides residents with a community-based general surgery experience that includes what would be considered “bread and butter” general surgery, such as cholecystectomy, hernia, breast biopsy, mastectomy, and colectomy. It is currently expanding to include a comprehensive weight management program and enhanced general surgical oncology.
Duke Medicine and Duke University

With a top-ranked medical school, health system, and university, Duke University is a hub for academic excellence and innovation. Located in Durham, N.C. — one of the fastest growing areas in the country and a center of biomedical research — it produces leaders in fields ranging from business to engineering to public policy. Duke Medicine, which comprises Duke University Health System, Duke University School of Medicine, and Duke University School of Nursing, consistently ranks as one of *U.S. News & World Report*'s best medical centers.

Duke Medicine is an international leader in health care, research, and training. Its state-of-the-art facilities include the flagship Duke Hospital and two community hospitals, Durham Regional and Duke Raleigh. It’s also affiliated with other health care facilities, including local hospitals, community-based primary care physician practices, and hospice care. The School of Medicine has 31 departments, centers, and institutes, and employs more than 2,000 faculty members. Duke logs more than 61,000 inpatient stays and 1.8 million outpatient visits each year.

Duke Medicine offers world-class education for some of the brightest minds in medicine. Programs promote multidisciplinary collaboration between basic science, translational, and clinical faculty. Trainees are encouraged to pursue research in their area of interest and, upon graduation, are uniquely positioned for sought-after clinical or research positions.
Durham, North Carolina

Located halfway between the stunning Blue Ridge Mountains and the spotless beaches of the Outer Banks, Durham is the fourth largest municipality in North Carolina. Visitors come to Durham for its sports teams, eclectic restaurants, and diverse culture; residents live here for its reasonable cost of living, strong sense of community, and agreeable weather. From Forbes to USA Today, the Raleigh-Durham area consistently lands on the major top 10 lists of best places in the country to visit, live, and do business.

Durham has the charm of a Southern college town with the amenities of a larger city. The nearby Research Triangle Park, the largest research park in the country, is a wellspring of advancements and career opportunities in biotechnology, environmental sciences, and pharmaceuticals. The annual Full Frame Documentary Film Festival brings together people from all over the world to showcase the work of new and established filmmakers. With more than 60 parks, an extensive network of running and biking trails, and several major waterways, the city offers abundant activities for outdoors enthusiasts. Access to and from Durham is convenient, as the RDU airport just 12 miles outside the city.
Residency Programs

General Surgery Residency

The General Surgery Residency Training Program at Duke focuses on both clinical and research education, producing competitive graduates who are prepared for careers in academic surgery. Residents gain broad experience in operative surgery as they learn to evaluate and manage a high number of patients requiring all types of procedures, from vascular to hepato-pancreatic biliary surgery.

Rotations in both community and VA medical centers mean that residents get valuable, unique, and comprehensive training for a career in academic surgery. The program is broad, but trainees have the opportunity to focus on one or more specialties, such as endocrine surgery or transplantation. General surgery residents are expected to complete at least two years of focused research, and opportunities for laboratory or other discovery experiences are available within and outside of the department. Most trainees choose specialization and seek fellowship training upon completion of the residency program, and the research experience is universally cited as a major reason that Duke residents are highly competitive for academic fellowships and faculty positions.

Cardiovascular and Thoracic Surgery Residency

Duke offers two training opportunities in cardiothoracic surgery: a traditional residency program and an integrated residency program that was recently approved by the ACGME.

The Traditional Thoracic Surgery Residency Training Program is a three-year program that prepares graduates for careers in academic cardiothoracic surgery, providing them with direct experience in all clinical aspects of cardiothoracic surgery and extensive training in clinical research. Residents gain experience with adult cardiac surgery, congenital cardiac surgery, and general thoracic surgery. A core focus of the program is a mentorship system that emphasizes consistent relationships with faculty members.

The Integrated 6-Year (I-6) Thoracic Surgery Residency Training Program leads to eligibility for certification by the American Board of Thoracic Surgery. With an educational curriculum created to augment operative and clinical training, residents in this program gain experience in general and vascular surgery, critical care, cardiac anesthesia, and cardiac catheterization, as well as cardiac and thoracic surgery.
General Surgery Conferences

Didactic Training

Monday
Intern (PGY-1) Conference (Intern School) 5:30 p.m. – 6:30 p.m.

Tuesday
Duke Regional Hospital Conference (Case Conference and Journal Club) 6:30 a.m. – 7:30 a.m.

Wednesday
Surgical M and M Conference* 6:00 a.m. – 7:00 a.m.
Surgical Grand Rounds* 7:00 a.m. – 8:00 a.m.
SCORE Curriculum Conference* 8:15 a.m. – 9:15 a.m.
Simulation Lab (SEAL)* 9:30 a.m. – 12:30 p.m.

Thursday
Durham VA Conference 7:00 a.m. – 8:00 a.m.
Duke Raleigh Hospital Conference 7:00 a.m. – 8:00 a.m.
Chairman Walk Rounds 4:30 p.m. – 5:30 p.m.

Friday
Duke Regional Hospital Walk Rounds 6:30 a.m. – 7:30 a.m.
Asheville VA Conference 7:30 a.m. – 8:30 a.m.
Chief Resident’s Academic Seminar 4:30 p.m. – 5:30 p.m.

*General Surgery Core Conferences
Resident Life

The Duke Department of Surgery understands the importance of work-life balance. Our residents form a close-knit community of peers who participate in many social activities outside of the hospital, including several department-sponsored events for residents and faculty. On their days off, residents spend time with their families and friends either traveling or experiencing all the city of Durham has to offer.

A rapidly growing city with a low cost of living, Durham is uniquely situated in the heart of North Carolina with only a 3-hour drive to the beach and a 3-hour drive to the mountains. Durham features some of the best restaurants in the South; a vibrant arts scene supported by the award-winning Durham Performing Arts Center, Carolina Theatre, and Nasher Art Museum; and sporting events showcasing teams steeped in tradition, including the Durham Bulls baseball team and the Duke men's basketball team coached by the legendary Mike Krzyzewski.
Community Engagement

General Surgery Interest Group
The Duke Department of Surgery sponsors the General Surgery Interest Group, a student-run organization that allows students to learn more about careers in general surgery through information sessions, case discussions, hands-on experiences, and professional mentorship facilitated by student-resident partnerships.

ASSET Program
The Department of Surgery has partnered with the Durham Nativity School to provide surgical skills workshops as part of the Academic Success Through Surgical Education and Training (ASSET) program. This program aims to foster high achievement in science through surgical education for financially disadvantaged students at the school.

Duke Cycling Team
The Department of Surgery sponsors the Duke University Cycling Team coached by Ben Turits. The triangle area is an exceptional area for cycling and outdoor activities in general. There are numerous cycling events year round, including group rides with the team and faculty.
Residents

Duke surgery residents are standouts in their field. Graduates consistently go on to land prestigious fellowships and highly sought-after clinical positions and academic professorships. Some focus on teaching, garnering awards for training and mentoring the next generation of surgeons. Others devote their careers to research, making significant advancements in surgical care.

The residents are typically highly productive during their time in training. Most establish themselves as bona fide authorities in a chosen field and exemplify this through significant contribution to the medical literature. This productivity indicates not only the high level of talent and ingenuity typical of the Duke surgery resident, but also speaks to the quality of mentorship in time management, prioritization, and other skills critical to academic success delivered during the residency period. The publications of the chief residents in surgery from the past two years (over 200) are presented as an example of the ongoing productivity of Duke surgical trainees.
Positions of Chief Residents of Surgery

The most important metric of a residency program is the success of its trainees. This is best captured by the most prominent position in one's career (for established surgeons) and the initial position obtained after residency (either faculty or fellowship for junior faculty). To assist applicants in understanding the breadth and height of the careers of trainees of the Department of Surgery, we provide the most prominent positions of all graduates of the program since 1970 and the initial appointments of new graduates for the past 20 years. You will note that approximately 70 percent of graduates follow academic careers, with numerous individuals rising to the level of department chair, dean, and other executive leadership positions.

2016

<table>
<thead>
<tr>
<th>Name</th>
<th>Most Prominent Position</th>
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<tbody>
<tr>
<td>Anthony Castleberry</td>
<td>Duke Chief Resident</td>
</tr>
<tr>
<td>Kristy Rialon Guevara</td>
<td>Duke Chief Resident</td>
</tr>
<tr>
<td>Jennifer Hanna</td>
<td>Duke Chief Resident</td>
</tr>
<tr>
<td>Georgios Kokosis</td>
<td>Duke Chief Resident</td>
</tr>
<tr>
<td>Michael Lidsky</td>
<td>Duke Chief Resident</td>
</tr>
<tr>
<td>Kevin Southerland</td>
<td>Duke Chief Resident</td>
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2015

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<thead>
<tr>
<th>Name</th>
<th>Initial Position</th>
<th>Most Prominent Position</th>
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<tbody>
<tr>
<td>Nicholas Andersen</td>
<td>Cardiothoracic Surgery Fellowship, Duke University Medical Center</td>
<td>Cardiothoracic Surgery Fellowship, Duke University Medical Center</td>
</tr>
<tr>
<td>Michael Barfield</td>
<td>Critical Care Fellowship, Duke University Medical Center</td>
<td>Critical Care Fellowship, Duke University Medical Center</td>
</tr>
<tr>
<td>Georgia Beasley</td>
<td>Surgical Oncology Fellowship, Ohio State Medical Center</td>
<td>Surgical Oncology Fellowship, Ohio State Medical Center</td>
</tr>
<tr>
<td>Marcus Darrabie</td>
<td>Surgical Research Fellowship, Duke University Medical Center</td>
<td>Surgical Research Fellowship, Duke University Medical Center</td>
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Positions of Chief Residents of Surgery (continued)

### 2015

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<thead>
<tr>
<th>Name</th>
<th>Initial Position</th>
<th>Most Prominent Position</th>
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<tbody>
<tr>
<td>David Lo</td>
<td>Plastic Surgery Fellowship, Emory University Medical Center</td>
<td>Plastic Surgery Fellowship, Emory University Medical Center</td>
</tr>
<tr>
<td>Lindsay Talbot</td>
<td>Critical Care Fellowship, Nationwide Children’s Hospital</td>
<td>Critical Care Fellowship, Nationwide Children’s Hospital</td>
</tr>
<tr>
<td>Ryan Turley</td>
<td>Vascular Surgery Fellowship, Duke University Medical Center</td>
<td>Vascular Surgery Fellowship, Duke University Medical Center</td>
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### 2014

<table>
<thead>
<tr>
<th>Name</th>
<th>Initial Position</th>
<th>Most Prominent Position</th>
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<tbody>
<tr>
<td>Andrew Barbas</td>
<td>Transplant Surgery Fellowship, University of Toronto</td>
<td>Transplant Surgery Fellowship, University of Toronto</td>
</tr>
<tr>
<td>Syamal Bhattacharya</td>
<td>Pediatric Surgery Fellowship, Vanderbilt University Medical Center</td>
<td>Pediatric Surgery Fellowship, Vanderbilt University Medical Center</td>
</tr>
<tr>
<td>Asad Shah</td>
<td>Cardiothoracic Surgery Fellowship, Duke University Medical Center</td>
<td>Cardiothoracic Surgery Fellowship, Duke University Medical Center</td>
</tr>
<tr>
<td>Robert Smith</td>
<td>Vascular Surgery Fellowship, University of Alabama</td>
<td>Vascular Surgery Fellowship, University of Alabama</td>
</tr>
<tr>
<td>Judson Williams</td>
<td>Cardiothoracic Surgery Fellowship, Duke University Medical Center</td>
<td>Cardiothoracic Surgery Fellowship, Duke University Medical Center</td>
</tr>
<tr>
<td>Giorgio Zanotti</td>
<td>Cardiothoracic Surgery Fellowship, University of Colorado</td>
<td>Cardiothoracic Surgery Fellowship, University of Colorado</td>
</tr>
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</table>
## Positions of Chief Residents of Surgery (continued)

### 2013

<table>
<thead>
<tr>
<th>Name</th>
<th>Initial Position</th>
<th>Most Prominent Position</th>
</tr>
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<tbody>
<tr>
<td>Kyla Bennett</td>
<td>Vascular Surgery Fellowship, Duke University</td>
<td>Assistant Professor, University of Wisconsin School of Medicine and Public Health</td>
</tr>
<tr>
<td>Nicole DeRosa</td>
<td>Surgical Oncology Fellowship, MD Anderson, TX</td>
<td>Assistant Professor of Surgery, University of Nebraska Medical Center</td>
</tr>
<tr>
<td>Dawn Elfenbein</td>
<td>Endocrine Fellowship, Madison, WI</td>
<td>Clinical Instructor, University of Wisconsin</td>
</tr>
<tr>
<td>Sarah Evans</td>
<td>Plastic Surgery Fellowship, University of Cincinnati</td>
<td>Plastic Surgery Resident, University of Cincinnati</td>
</tr>
<tr>
<td>Keri Lunsford</td>
<td>Abdominal Transplant Fellowship, UCLA Medical Center</td>
<td>Clinical Instructor, UCLA Medical Center</td>
</tr>
<tr>
<td>Vanessa Schroder</td>
<td>Critical Care Fellowship, Duke University Medical Center</td>
<td>Assistant Professor of Surgery, Duke University Medical Center</td>
</tr>
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### 2012

<table>
<thead>
<tr>
<th>Name</th>
<th>Initial Position</th>
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<tbody>
<tr>
<td>Melissa Danko</td>
<td>Pediatric Surgery Fellowship, Vanderbilt University</td>
<td>Assistant Professor of Surgery, Vanderbilt University</td>
</tr>
<tr>
<td>Sapan Desai</td>
<td>Vascular Surgery Fellowship, UT Houston</td>
<td>Assistant Professor of Surgery, Southern Illinois University; Director of the Quality Alliance and Predictive Analysis, Memorial Medical Center; Chief Executive Officer, Surgisphere Corporation</td>
</tr>
<tr>
<td>Loretta Erhunmwunsee</td>
<td>Cardiothoracic Surgery Fellowship, Duke University Medical Center</td>
<td>Assistant Professor of Surgery, City of Hope Cancer Center</td>
</tr>
</tbody>
</table>
Positions of Chief Residents of Surgery (continued)

### 2012

<table>
<thead>
<tr>
<th>Name</th>
<th>Initial Position</th>
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<tbody>
<tr>
<td>Sean Lee</td>
<td>Minimally Invasive Surgery Fellowship, Duke University Medical Center</td>
<td>Assistant Professor of Surgery, Medical College of Georgia</td>
</tr>
<tr>
<td>James Padussis</td>
<td>Minimally Invasive Surgery Fellowship, Duke University Medical Center</td>
<td>Assistant Professor of Surgery, University of Nebraska Medical Center</td>
</tr>
<tr>
<td>Elisabeth Tomlinson-Tracy</td>
<td>Pediatric Surgery Fellowship, Boston Children's Hospital</td>
<td>Assistant Professor of Surgery, Duke University Medical Center</td>
</tr>
<tr>
<td>Nestor Villamizar</td>
<td>Thoracic Surgery Fellowship, Brigham &amp; Women's Hospital</td>
<td>Assistant Professor of Surgery, University of Miami Hospital</td>
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### 2011

<table>
<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Mani Daneshmand</td>
<td>Cardiothoracic Surgery Fellowship, Duke University Medical Center</td>
<td>Assistant Professor of Surgery, Duke University Medical Center</td>
</tr>
<tr>
<td>Diana Diesen</td>
<td>Pediatric Surgery Fellowship, UT Southwestern</td>
<td>Assistant Professor of Surgery, UT Southwestern Medical Center</td>
</tr>
<tr>
<td>John Haney</td>
<td>Cardiothoracic Surgery Fellowship, Duke University Medical Center</td>
<td>Assistant Professor of Surgery, Duke University Medical Center</td>
</tr>
<tr>
<td>Kelley Hutcheson</td>
<td>Cardiothoracic Surgery Fellowship, Washington University</td>
<td>Assistant Professor of Surgery, Baylor University Medical Center</td>
</tr>
<tr>
<td>Luigi Pascarella</td>
<td>Vascular Surgery Fellowship, Duke University Medical Center</td>
<td>Assistant Professor of Surgery, University of Iowa</td>
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</table>
## Positions of Chief Residents of Surgery (continued)

### 2011

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<thead>
<tr>
<th>Name</th>
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<th>Most Prominent Position</th>
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<tbody>
<tr>
<td>Immanuel Turner</td>
<td>Cardiothoracic Surgery Fellowship, University of Michigan</td>
<td>Assistant Professor of Surgery, Carolinas Medical Center</td>
</tr>
<tr>
<td>Brian Untch</td>
<td>Surgical Oncology Fellowship, Memorial Sloan-Kettering Cancer Center</td>
<td>Assistant Professor of Surgery, Memorial Sloan-Kettering Cancer Center</td>
</tr>
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### 2010

<table>
<thead>
<tr>
<th>Name</th>
<th>Initial Position</th>
<th>Most Prominent Position</th>
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<tbody>
<tr>
<td>Keki Balsara</td>
<td>Critical Care Fellowship, Duke University Medical Center</td>
<td>Assistant Professor of Surgery, Washington University School of Medicine in St. Louis</td>
</tr>
<tr>
<td>Errol Bush</td>
<td>Cardiothoracic Surgery Fellowship, UCSF</td>
<td>Assistant Professor of Surgery, UCSF</td>
</tr>
<tr>
<td>Eugene Ceppa</td>
<td>Minimally Invasive Fellowship, Duke University Medical Center</td>
<td>Assistant Professor of Surgery, Indiana University</td>
</tr>
<tr>
<td>Sebastian de la Fuente</td>
<td>Surgical Oncology Fellowship, Moffitt Cancer Center</td>
<td>Physician Research Coordinator and Director of Research of the General Surgery Residency Program, Florida Hospital, Orlando; Assistant Professor of Surgery, University of Central Florida and Florida State University</td>
</tr>
<tr>
<td>Jeffrey Nienaber</td>
<td>Vascular Surgery Fellowship, Mayo Clinic (Rochester)</td>
<td>Attending Surgeon, Asheville VA Medical Center</td>
</tr>
<tr>
<td>Srinevas Reddy</td>
<td>Surgical Oncology Fellowship, University of Pittsburgh</td>
<td>Assistant Professor of Surgery, University of Maryland</td>
</tr>
<tr>
<td>Tamarah Westmoreland</td>
<td>Pediatric Surgical Oncology Fellowship, St. Jude Hospital (Memphis)</td>
<td>Assistant Professor of Surgery, Nemours Children's Hospital, FL</td>
</tr>
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</table>
## Positions of Chief Residents of Surgery (continued)

### 2009

<table>
<thead>
<tr>
<th>Name</th>
<th>Initial Position</th>
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<tbody>
<tr>
<td>Brian Lima</td>
<td>Cardiothoracic Surgery Fellowship, Cleveland Clinic</td>
<td>Assistant Professor of Surgery, Baylor University Medical Center</td>
</tr>
<tr>
<td>Vanessa Olcese</td>
<td>Abdominal Transplant Fellowship, University of Wisconsin</td>
<td>Assistant Professor of Surgery, Ohio State University</td>
</tr>
<tr>
<td>Mayur Patel</td>
<td>Surgical Critical Care and Acute Care Surgery Fellow, Vanderbilt Medical Center</td>
<td>Assistant Professor of Surgery; Assistant Professor of Neurological Surgery, Vanderbilt University</td>
</tr>
<tr>
<td>Rebecca Prince-Petersen</td>
<td>Minimally Invasive Surgery Fellowship, University of Washington, Seattle</td>
<td>Assistant Professor of Surgery, University of Washington</td>
</tr>
<tr>
<td>Keshava Rajagopal</td>
<td>Cardiothoracic Surgery Fellowship, Duke University Medical Center</td>
<td>Assistant Professor of Surgery, University of Maryland</td>
</tr>
<tr>
<td>Jacob Schroder</td>
<td>Cardiothoracic Surgery Fellowship, Duke University Medical Center</td>
<td>Assistant Professor of Surgery, Duke University Medical Center</td>
</tr>
<tr>
<td>Jin Yoo</td>
<td>MIS/Bariatric Fellowship, Duke University Medical Center</td>
<td>Assistant Professor of Surgery, Duke University Medical Center</td>
</tr>
<tr>
<td>David Sindram</td>
<td>HPB Surgery Fellowship, Carolinas Medical Center</td>
<td>Faculty, Carolinas Medical Center</td>
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</table>
Positions of Chief Residents of Surgery (continued)

2008

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<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>James Appel</td>
<td>Plastic Surgery Fellowship, Vanderbilt Medical Center</td>
<td>Private Practice, Calabretta Cosmetic Surgery, Charlotte, NC</td>
</tr>
<tr>
<td>Matthew Hartwig</td>
<td>Cardiopulmonary Fellowship, Duke University Medical Center</td>
<td>Assistant Professor of Surgery, Duke University Medical Center</td>
</tr>
<tr>
<td>Erich Huang</td>
<td>Assistant Professor of Surgery, Duke University Medical Center</td>
<td>Adjunct Assistant Professor, Duke University, Director of Cancer Research, Sage Bionetworks, Seattle, WA</td>
</tr>
<tr>
<td>Anthony Lemaire</td>
<td>Cardiopulmonary Fellowship, Duke University Medical Center</td>
<td>Assistant Professor of Surgery, Robert Wood Johnson University Hospital</td>
</tr>
<tr>
<td>Mimi Pham</td>
<td>Cardiopulmonary Fellowship, Duke University Medical Center</td>
<td>Assistant Professor of Surgery, Indiana University</td>
</tr>
<tr>
<td>Jose Trani</td>
<td>Vascular Surgery Fellowship, University of North Carolina at Chapel Hill</td>
<td>Assistant Professor of Surgery, Cooper University Health System, Philadelphia, PA/ Camden, NJ</td>
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2007

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<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Jennifer H. Aldrink</td>
<td>Pediatric Surgery Fellowship, Columbus Children's Hospital</td>
<td>Assistant Professor of Surgery, Nationwide Children's Hospital, Columbus, OH</td>
</tr>
<tr>
<td>Edward Cantu</td>
<td>Cardiopulmonary Fellowship, Duke University Medical Center</td>
<td>Assistant Professor of Surgery, University of Pennsylvania</td>
</tr>
<tr>
<td>Denise Ching</td>
<td>Surgical Oncology Fellowship, MD Anderson Cancer Center</td>
<td>Palo Alto Medical Foundation/ Sutter Medical Network</td>
</tr>
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</table>
Positions of Chief Residents of Surgery (continued)

### 2007

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<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Steve Hanish</td>
<td>Abdominal Transplant Fellowship, University of Wisconsin</td>
<td>Associate Professor of Surgery, University of Maryland Medical Center</td>
</tr>
<tr>
<td>Jonathan Hata</td>
<td>MIS Fellowship, Duke University Medical Center</td>
<td>Private Practice, Hickory Surgical Clinic, NC</td>
</tr>
<tr>
<td>Melissa Poh</td>
<td>Plastic Surgery Fellowship, Vanderbilt Medical Center</td>
<td>Private Practice, Los Angeles, CA</td>
</tr>
<tr>
<td>Joseph Turek</td>
<td>Cardiothoracic Fellowship, Duke University Medical Center</td>
<td>Assistant Professor, Cardiothoracic Surgery, University of Iowa</td>
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### 2006

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<tr>
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<tbody>
<tr>
<td>Kelli Brooks</td>
<td>Trauma/Critical Care Fellowship, Duke University Medical Center</td>
<td>Assistant Professor of Surgery, Duke University Medical Center</td>
</tr>
<tr>
<td>Elizabeth Grubbs</td>
<td>Surgical Oncology Fellowship, MD Anderson Cancer Center</td>
<td>Assistant Professor of Surgery, MD Anderson Cancer Center</td>
</tr>
<tr>
<td>Aftab Kherani</td>
<td>Consultant, McKinsey &amp; Company, New York</td>
<td>Principal of Aisling Capital Group</td>
</tr>
<tr>
<td>Jason Petrofski</td>
<td>Colorectal Fellowship, Cleveland Clinic</td>
<td>Private Practice, Atlanta Colon and Rectal Surgery</td>
</tr>
<tr>
<td>Shiva Sarraf-Yazdi</td>
<td>Instructor and Clinical Fellow, Duke-National University of Singapore</td>
<td>Assistant Dean of Recruitment and Admissions, Assistant Professor, Duke NUS</td>
</tr>
<tr>
<td>Richard Thompson</td>
<td>Cardiothoracic Surgery Fellowship, UVA, Charlottesville, VA</td>
<td>Faculty, Bryan Health, NE</td>
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</table>
### Positions of Chief Residents of Surgery (continued)

#### 2005

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Jeffrey Gaca</td>
<td>Cardiothoracic Fellowship, Duke University Medical Center</td>
<td>Assistant Professor of Surgery, Duke University Medical Center</td>
</tr>
<tr>
<td>Matthew Kalady</td>
<td>Colorectal Fellowship, Cleveland Clinic</td>
<td>Assistant Professor of Surgery, Cleveland Clinic, among other appointments</td>
</tr>
<tr>
<td>Jamie Nathan</td>
<td>Pediatric Surgery Fellowship, Cincinnati Children's Hospital</td>
<td>Assistant Professor of Surgery, Director of Intestinal Transplantation Program, University of Cincinnati</td>
</tr>
<tr>
<td>Shawn Safford</td>
<td>United States Navy</td>
<td>Assistant Professor of Surgery, Penn State, Milton S. Hershey Medical Center</td>
</tr>
<tr>
<td>John Scarborough</td>
<td>Abdominal Transplant Fellowship, Duke University Medical Center</td>
<td>Associate Professor of Surgery, University of Wisconsin School of Medicine and Public Health</td>
</tr>
<tr>
<td>Rebekah White</td>
<td>Surgical Oncology Fellowship, Memorial Sloan-Kettering Cancer Center</td>
<td>Associate Professor of Surgery, Duke University Medical Center</td>
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#### 2004

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<tr>
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<tbody>
<tr>
<td>Rolf Barth</td>
<td>Abdominal Transplant Fellowship, University of Wisconsin</td>
<td>Associate Professor of Surgery, University of Maryland Medical Center</td>
</tr>
<tr>
<td>Patrick Domkowski</td>
<td>Private practice, Palm Bay, FL</td>
<td>Private Practice, Sebastian River Medical Center, Sebastian, FL</td>
</tr>
<tr>
<td>Sitaram Emani</td>
<td>Cardiothoracic Fellowship, Duke University Medical Center</td>
<td>Assistant Professor of Surgery, Children's Hospital Boston</td>
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## Positions of Chief Residents of Surgery (continued)

### 2004

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<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Jay Lee</td>
<td>Cardiothoracic Fellowship, Brigham &amp; Women's Hospital</td>
<td>Associate Professor of Surgery, Chief of Thoracic Surgery, UCLA Medical Center</td>
</tr>
<tr>
<td>Mark Onaitis</td>
<td>Cardiothoracic Fellowship, Duke University Medical Center</td>
<td>Associate Professor of Surgery, Duke University Medical Center</td>
</tr>
<tr>
<td>Gretchen Purcell</td>
<td>Pediatric Surgery Fellowship, Children's Hospital of Pittsburgh</td>
<td>Assistant Professor of Surgery, Vanderbilt University</td>
</tr>
<tr>
<td>Christopher Touloukian</td>
<td>Assistant Professor of Surgery, Indiana University</td>
<td>Associate Professor of Surgery, Indiana University</td>
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### 2003

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<tr>
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<tbody>
<tr>
<td>Thomas Aloia</td>
<td>Surgical Oncology Fellowship, MD Anderson Cancer Center</td>
<td>Associate Professor of Surgery, MD Anderson</td>
</tr>
<tr>
<td>Shankha Biswas</td>
<td>Cardiothoracic Fellowship, Duke University Medical Center</td>
<td>Private Practice, Partner, Synergy CT Surgery Partnership, Riverside, CA</td>
</tr>
<tr>
<td>G. Gonzalez-Stawinski</td>
<td>Cardiothoracic Fellowship, Cleveland Clinic</td>
<td>Chief of Heart Transplantation and MCS, Baylor University Medical Center-Dallas</td>
</tr>
<tr>
<td>G. Robert Stephenson</td>
<td>Abdominal Transplant Fellowship, University of Pennsylvania</td>
<td>Private Practice, Texas Health Care PLLC, Ft. Worth, TX</td>
</tr>
<tr>
<td>David White</td>
<td>Cardiothoracic Fellowship, Duke University Medical Center</td>
<td>Associate Professor of Surgery, Duke University Medical Center</td>
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### Positions of Chief Residents of Surgery (continued)

#### 2002

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<tr>
<th>Name</th>
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<tbody>
<tr>
<td>B. Zane Atkins</td>
<td>United States Air Force/Cardiothoracic Fellowship Duke University</td>
<td>Clinical Assistant Professor of Surgery, UC Davis Medical Center; Chief of CT Surgery, USAF David Grant Medical Center</td>
</tr>
<tr>
<td>G. Chad Hughes</td>
<td>Cardiothoracic Fellowship, Duke University Medical Center</td>
<td>Associate Professor of Surgery and Director, Aortic Surgery Program, Duke University Medical Center</td>
</tr>
<tr>
<td>Christine Lau</td>
<td>Cardiothoracic Fellowship, Washington University</td>
<td>Associate Professor of Surgery and Director Lung Transplant Program, University of Virginia</td>
</tr>
<tr>
<td>Kendra Merine</td>
<td>Vascular Surgery Fellowship, Washington Hospital Center</td>
<td>Private practice, Miramar, FL</td>
</tr>
<tr>
<td>Paul Mosca</td>
<td>Assistant Professor of Surgery, Duke University Medical Center</td>
<td>Associate Professor of Surgery, Duke University Medical Center; Vice Chair, General Surgery Network</td>
</tr>
<tr>
<td>Aurora Pryor</td>
<td>MIS Fellowship, Duke University Medical Center</td>
<td>Professor of Surgery and Vice Chair for Clinical Affairs, Chief General Surgery Division, Director Bariatric and Metabolic Weight Loss Center, Stony Brook School of Medicine</td>
</tr>
<tr>
<td>Ashish Shah</td>
<td>Cardiothoracic Fellowship, Duke University Medical Center</td>
<td>Professor of Cardiac Surgery, Surgical Director, Vanderbilt Heart Transplant and Mechanical Circulatory Support, Vanderbilt University Medical Center</td>
</tr>
</tbody>
</table>
# Positions of Chief Residents of Surgery (continued)

<table>
<thead>
<tr>
<th>Name</th>
<th>Initial Position</th>
<th>Most Prominent Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>William Burfeind</td>
<td>Cardiothoracic Fellowship, Duke University Medical Center</td>
<td>Chief of Thoracic Surgery, St. Luke’s Health Network</td>
</tr>
<tr>
<td>Paul Chai</td>
<td>Cardiothoracic Fellowship, Duke University Medical Center</td>
<td>Assistant Professor of Clinical Surgery, Columbia University Medical Center</td>
</tr>
<tr>
<td>Lisa Clark Pickett</td>
<td>Assistant Professor of Surgery, Duke University Medical Center</td>
<td>Assistant Professor of Surgery, Assistant Professor of Medicine and Chief Medical Officer, Duke University Medical Center</td>
</tr>
<tr>
<td>Pierre Dematos</td>
<td>Private practice, Asheville, NC</td>
<td>Private practice, Regional Surgical Specialists, Asheville, NC</td>
</tr>
<tr>
<td>Thomas Hayward</td>
<td>Trauma/Critical Care Fellowship, Maryland Shock Trauma</td>
<td>Assistant Professor of Surgery, Indiana University</td>
</tr>
<tr>
<td>Shu Lin</td>
<td>Cardiothoracic Fellowship, Duke University Medical Center</td>
<td>Associate Professor of Surgery, Associate Professor in Pathology and Assistant Professor in Immunology, Duke University Medical Center</td>
</tr>
<tr>
<td>John Maurice</td>
<td>Cardiothoracic Fellowship, Duke University Medical Center</td>
<td>Private practice, Newport Beach, CA</td>
</tr>
<tr>
<td>Kirsten Wilkins</td>
<td>Colorectal Fellowship, UMDNJ–Robert Wood Johnson Hospital</td>
<td>Private practice, New Jersey</td>
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</table>
Positions of Chief Residents of Surgery (continued)

### 2000

<table>
<thead>
<tr>
<th>Name</th>
<th>Initial Position</th>
<th>Most Prominent Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shabab Akhter</td>
<td>Cardiothoracic Fellowship, University of Michigan</td>
<td>Professor of Surgery and Chairman Division of Cardiothoracic Surgery, University of Wisconsin</td>
</tr>
<tr>
<td>Larkin Daniels</td>
<td>Cardiothoracic Fellowship, Duke University Medical Center</td>
<td>Private practice, Cardio-Thoracic and Vascular Surgical Associates, Mobile, AB</td>
</tr>
<tr>
<td>Kimberly Gandy</td>
<td>Cardiothoracic Fellowship, Duke University Medical Center</td>
<td>Adjunct Associate Professor, Biomedical and Health Informatics, UMKC; Associate Clinical Professor, Pediatrics, Medical College of Wisconsin; Founder and CEO, Play-it Health; CMO, Infusion Express</td>
</tr>
<tr>
<td>Cleveland Lewis Jr.</td>
<td>Cardiothoracic Fellowship, Duke University Medical Center</td>
<td>Private practice, Hudson Valley Thoracic Associates, NY</td>
</tr>
<tr>
<td>Andrew Lodge</td>
<td>Cardiothoracic Fellowship, Duke University Medical Center</td>
<td>Associate Professor of Surgery and Associate Professor of Pediatrics, Duke University Medical Center</td>
</tr>
<tr>
<td>Alan Kypson</td>
<td>Cardiothoracic Fellowship, Duke University Medical Center</td>
<td>Associate Professor of Surgery, East Carolina University Brody School of Medicine</td>
</tr>
<tr>
<td>Robert Noone</td>
<td>Colorectal Fellowship, Cleveland Clinic</td>
<td>Private practice, Main Line Health, Wynnewood PA</td>
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</table>
## Positions of Chief Residents of Surgery (continued)

### 1999

<table>
<thead>
<tr>
<th>Name</th>
<th>Initial Position</th>
<th>Most Prominent Position</th>
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<tbody>
<tr>
<td>R. Eric Lilly</td>
<td>Cardiothoracic Fellowship, Duke University Medical Center</td>
<td>Assistant Professor of Surgery, Medical College of Wisconsin</td>
</tr>
<tr>
<td>James St. Louis</td>
<td>Cardiothoracic Fellowship, Duke University Medical Center</td>
<td>Co-Director, Division of Pediatric Cardiology; Associate Professor, Division of Cardiothoracic Surgery; Aldo Castaneda Professorship in Congenital Heart Surgery, University of Minnesota</td>
</tr>
<tr>
<td>Christopher Suhr</td>
<td>Private practice, Aiken, SC</td>
<td>Private practice, Onslow Surgical Clinic, Jacksonville, NC</td>
</tr>
<tr>
<td>Bryan Weidner</td>
<td>Surgical Critical Care Fellowship, Duke University Medical Center</td>
<td>Chief of Pediatric Surgery and Surgeon-in-Chief, Children’s Hospital at Sacred Heart, Pensacola, FL</td>
</tr>
<tr>
<td>Jeffrey H. Lawson</td>
<td>Vascular Surgery Fellowship, Duke University Medical Center</td>
<td>Professor of Surgery, Professor in Pathology, and Program Director for Surgery Research, Duke University Medical Center</td>
</tr>
<tr>
<td>Charles Hoopes</td>
<td>Cardiothoracic Fellowship, University of Michigan</td>
<td>Associate Professor of Surgery, Jason Alexander Gill Professor in Thoracic Surgery, Section Chief Cardiopulmonary Transplant, Director Heart Mechanical Circulator Support, and Director Comprehensive Transplant Institute, University of Kentucky College of Medicine</td>
</tr>
</tbody>
</table>
### Positions of Chief Residents of Surgery (continued)

**1998**

<table>
<thead>
<tr>
<th>Name</th>
<th>Initial Position</th>
<th>Most Prominent Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scott C. Silvestry</td>
<td>Cardiothoracic Fellowship, Duke University Medical Center</td>
<td>Associate Professor of Surgery, Division of CT Surgery, Washington University, St. Louis, MO</td>
</tr>
<tr>
<td>R. Anthony Perez-Tamayo</td>
<td>Surgical Critical Care Fellowship, Duke University Medical Center</td>
<td>Associate Professor of Surgery, Associate Program Director, Rush University; Senior Attending, Stroger Hospital of Cook County (former Chief of CT 2006–2012); Associate Professor of Surgery, Loyola University, Chicago, IL</td>
</tr>
<tr>
<td>Adrian H. Cotterell</td>
<td>Transplantation Surgery Fellowship, University of Miami/ Jackson Memorial Hospital</td>
<td>Associate Professor of Surgery, Division of Transplant Surgery, Virginia Commonwealth University Health System</td>
</tr>
<tr>
<td>Louis DiBernardo</td>
<td>Cardiothoracic Fellowship, Duke University Medical Center</td>
<td>Assistant Professor of Pathology, Duke University Medical Center</td>
</tr>
<tr>
<td>Paul Kirshbom</td>
<td>Cardiothoracic Surgery Fellowship, Duke University Medical Center</td>
<td>Professor of Surgery and Chief Pediatric Cardiac Surgery, Yale School of Medicine</td>
</tr>
<tr>
<td>Christopher Mantyh</td>
<td>Colorectal Surgery Fellowship, Cleveland Clinic Foundation</td>
<td>Professor of Surgery and Chief of Gastrointestinal and Colorectal Surgery, Duke University Medical Center</td>
</tr>
<tr>
<td>Bryan Clary</td>
<td>Surgical Oncology Fellowship, Memorial Sloan Kettering Cancer Center</td>
<td>Professor and Chair of the Department of Surgery, M.J. Orloff Family Endowed Chair in Surgery, Surgeon-in-Chief, UC San Diego Health System</td>
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</table>
## Positions of Chief Residents of Surgery (continued)

### 1997

<table>
<thead>
<tr>
<th>Name</th>
<th>Initial Position</th>
<th>Most Prominent Position</th>
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</thead>
<tbody>
<tr>
<td>Carmelo Milano</td>
<td>Cardiothoracic Surgery Fellowship, Duke University Medical Center</td>
<td>Professor of Surgery and Surgical Director of Cardiac Transplant and LVAD Programs, Duke University Medical Center</td>
</tr>
<tr>
<td>Scott H. Pruitt</td>
<td>Assistant Professor of Surgery, Duke University Medical Center</td>
<td>Senior Principal Scientist, Merck Research Labs</td>
</tr>
<tr>
<td>Lynne Skaryak</td>
<td>Cardiothoracic Surgery Fellowship, Duke University Medical Center</td>
<td>Attending Surgeon, Medstar Georgetown University Hospital, Baltimore, MD</td>
</tr>
<tr>
<td>Harmuth Bittner</td>
<td>Cardiothoracic Surgery Fellowship, Duke University Medical Center</td>
<td>Director of Heart and Lung Transplantation, Florida Hospital, Orlando, FL</td>
</tr>
<tr>
<td>Bradley H. Collins</td>
<td>Transplant Surgery Fellowship, University of Wisconsin Hospital and Clinics</td>
<td>Associate Professor of Surgery, Duke University Medical Center</td>
</tr>
<tr>
<td>Mark Davies</td>
<td>Vascular Surgery Fellowship, University of Washington</td>
<td>Professor of Surgery, Vice Chairman of Cardiovascular Surgery, The Methodist Hospital; Associate Quality Officer, The Methodist Hospital System, Houston, TX</td>
</tr>
<tr>
<td>Joseph M. Forbess</td>
<td>Cardiothoracic Surgery Fellowship, Duke University Medical Center</td>
<td>Professor of Surgery and Chairman of the Division of Pediatric Cardiothoracic Surgery, UT Southwestern Medical Center; Co-Director of the Heart Center, Children's Medical Center Dallas; Pogue Distinguished Chair in Pediatric Cardiac Surgery Research</td>
</tr>
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</table>
## Positions of Chief Residents of Surgery (continued)

### 1996

<table>
<thead>
<tr>
<th>Name</th>
<th>Initial Position</th>
<th>Most Prominent Position</th>
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<tbody>
<tr>
<td>Cary H. Meyer</td>
<td>Cardiothoracic Surgery Fellowship, Duke University Medical Center</td>
<td>Private practice, Cardiovascular Associates, Kingsport, TN</td>
</tr>
<tr>
<td>Clarence H. Owen</td>
<td>Cardiothoracic Surgery Fellowship, Duke University Medical Center</td>
<td>Private practice, Triad Cardiac and Thoracic Surgery, Greensboro, NC</td>
</tr>
<tr>
<td>Jeffrey C. Pence</td>
<td>Cardiothoracic Surgery Fellowship, Duke University Medical Center</td>
<td>Associate Professor of Surgery and Associate Residency Program Director, Childrens Medical Center of Dayton, OH</td>
</tr>
<tr>
<td>Christina Weltz</td>
<td></td>
<td>Assistant Professor of Surgery, Mt. Sinai School of Medicine, NY</td>
</tr>
<tr>
<td>Mark Tedder</td>
<td>Cardiothoracic Surgery Fellowship, Duke University Medical Center</td>
<td>Attending, St. Thomas Health, Nashville TN; Private practice, Cardiovascular Associates, Nashville, TN</td>
</tr>
<tr>
<td>Mark Anstadt</td>
<td>Cardiothoracic Surgery Fellowship, Duke University Medical Center</td>
<td>Private practice, Miami Valley Heart &amp; Lung Surgeons; Holds voluntary faculty positions at Boonshoft School of Medicine, Wright State, OH; Formerly Professor of Surgery, Associate Professor of Pharmacology and Toxicology, Chair of CT Surgery, and Vice Chair of Department of Surgery)</td>
</tr>
<tr>
<td>Ravi Chari</td>
<td>Hepatobiliary and Abdominal Transplant Fellowship, University of Toronto</td>
<td>Vice President of Clinical Excellence, Clinical Services Group, Hospital Corporation of America (HCA)</td>
</tr>
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</table>
Positions of Chief Residents of Surgery (continued)

1996

<table>
<thead>
<tr>
<th>Name</th>
<th>Initial Position</th>
<th>Most Prominent Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michael Demaio</td>
<td>Cardiothoracic Surgery Fellowship, Duke University Medical Center</td>
<td>Professor of Surgery, Director of the Lung/Heart-Lung Transplant Program, and Director of Research, Department of CT Surgery, UT Southwestern Medical Center; Founder, Spectral MD</td>
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1995

<table>
<thead>
<tr>
<th>Name</th>
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<th>Most Prominent Position</th>
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<tbody>
<tr>
<td>James R. Mault</td>
<td>Cardiothoracic Surgery Fellowship, Duke University Medical Center</td>
<td>Vice President and CMO of Qualcomm Life</td>
</tr>
<tr>
<td>David S. Peterseim</td>
<td>Cardiothoracic Surgery Fellowship, Duke University Medical Center</td>
<td>Private practice, Charleston, SC</td>
</tr>
<tr>
<td>William N. Pugh</td>
<td>Private practice</td>
<td>Private practice, American Fork Surgical Associates, American Fork, UT</td>
</tr>
<tr>
<td>Cemil M. Purut</td>
<td>Cardiothoracic Surgery Fellowship, Duke University Medical Center</td>
<td>Private practice, Hickory Heart Lung and Vascular, NC</td>
</tr>
<tr>
<td>Paul M. Aheanne</td>
<td>Surgical Oncology Fellowship, MD Anderson</td>
<td>Private practice, Regional Surgical Specialists, Asheville, NC</td>
</tr>
<tr>
<td>Francis Duhaylongsod</td>
<td>Cardiothoracic Surgery Fellowship, Duke University Medical Center</td>
<td>VP and Chief Medical Director, Edwards Lifesciences</td>
</tr>
<tr>
<td>Allan D. Kirk</td>
<td>Multi-Organ Transplant Fellowship, University of Wisconsin</td>
<td>Chair of Surgery and Surgeon-in-Chief, Duke University Medical Center</td>
</tr>
<tr>
<td>Theodore Koutlas</td>
<td>Fellowship, Duke University Medical Center</td>
<td>Professor of Surgery, Pediatric Cards, ECU</td>
</tr>
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## Positions of Chief Residents of Surgery (continued)

### 1994

<table>
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<tr>
<th>Name</th>
<th>Most Prominent Position</th>
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<tbody>
<tr>
<td>Thomas A. D'Amico</td>
<td>Professor of Surgery; Chief, Section of General Thoracic Surgery; Vice Chair of Surgery; and Chief Medical Officer of Duke Cancer Institute, Duke University Medical Center</td>
</tr>
<tr>
<td>Andrew Davidoff</td>
<td>Chair of Surgery, St. Jude's Children Research Hospital, Memphis, TN</td>
</tr>
<tr>
<td>Stanley A. Gall Jr.</td>
<td>Prairie Thoracic and Cardiovascular Surgeons, Prairie Heart Institute, Springfield Illinois</td>
</tr>
<tr>
<td>Jeffrey S. Heinle</td>
<td>Pediatric Cardiovascular Surgery, Cook Children’s Medical Center, Fort Worth, TX</td>
</tr>
<tr>
<td>Scott H. Johnson</td>
<td>Assistant Professor, Department of Surgery, Washington University School of Medicine</td>
</tr>
<tr>
<td>Kevin P. Landolfo</td>
<td>Assistant Professor of Surgery, Duke University Medical Center</td>
</tr>
<tr>
<td>Lewis B. Schwartz</td>
<td>Assistant Professor, Section of Vascular Surgery, University of Chicago</td>
</tr>
<tr>
<td>Mark W. Sebastian</td>
<td>Assistant Professor, Department of Surgery, Duke University Medical Center</td>
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### 1993

<table>
<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Gene D. Branum</td>
<td>Assistant Professor, Department of Surgery, Emory University Hospital</td>
</tr>
<tr>
<td>Nancy J. Crowley</td>
<td>Tolnitch Surgical Associates, Raleigh, NC</td>
</tr>
<tr>
<td>Joseph R. Elbeery</td>
<td>Assistant Professor of Surgery, Division of Cardiovascular Surgery, East Carolina University School of Medicine</td>
</tr>
<tr>
<td>J. Scott Kabas</td>
<td>AnMed Health Heart and Vascular Center, Anderson, SC</td>
</tr>
<tr>
<td>Theodore C. Koutlas</td>
<td>Assistant Professor, Division of Cardiovascular Surgery, East Carolina University School of Medicine</td>
</tr>
<tr>
<td>John C. Lucke</td>
<td>Assistant Consulting Professor, Duke University Medical Center</td>
</tr>
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Positions of Chief Residents of Surgery (continued)

1993

<table>
<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Mark D. Plunkett</td>
<td>Fellow in Congenital Cardiac Surgery, Division of Cardiothoracic Surgery, UCLA Medical Center</td>
</tr>
<tr>
<td>Phillip D. Shadduck</td>
<td>Clinical Assistant Professor of Surgery, Duke University Medical Center</td>
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1992

<table>
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<tr>
<th>Name</th>
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<tbody>
<tr>
<td>R. Duane Davis Jr.</td>
<td>Professor of Surgery, Director Transplant Services, Department of Surgery, Duke University Medical Center</td>
</tr>
<tr>
<td>Gregory P. Fontana</td>
<td>Assistant Clinical Professor, Department of Thoracic and Cardiovascular Surgery, UCLA School of Medicine</td>
</tr>
<tr>
<td>Robert C. Harland</td>
<td>Chief of Surgical Immunology and Transplantation, Brody School of Medicine</td>
</tr>
<tr>
<td>David H. Harpole Jr.</td>
<td>Professor of Surgery, Associate Professor in Pathology, Vice Chief Division of Surgical Sciences, Duke University Medical Center</td>
</tr>
<tr>
<td>Douglas A. Tyler</td>
<td>Chairman of Surgery, University of Texas Medical Branch</td>
</tr>
<tr>
<td>Ronald J. Weigel</td>
<td>Assistant Professor of Surgery, Stanford University Medical Center</td>
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1991

<table>
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<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Louis A. Brunsting</td>
<td>Associate Professor, University of Alabama at Birmingham</td>
</tr>
<tr>
<td>Robin G. Cummings</td>
<td>Medicaid Director, NC Dept. of Health &amp; Human Services</td>
</tr>
<tr>
<td>James W. Gaynor</td>
<td>Associate Professor of Surgery, Perelman School of Medicine, University of Pennsylvania</td>
</tr>
<tr>
<td>Robert L. Quigley</td>
<td>Regional Medical Director and Senior Vice President of Medical Assistance, Americas at International SOS</td>
</tr>
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### Positions of Chief Residents of Surgery (continued)

#### 1991

<table>
<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Michael A. Skinner</td>
<td>Professor of Surgery, Washington State University</td>
</tr>
<tr>
<td>Craig L. Slinghuff</td>
<td>Professor of Surgery, University of Virginia School of Medicine</td>
</tr>
<tr>
<td>Christopher R. Watters</td>
<td>Clinical Associate, Department of Surgery, Duke University Medical Center</td>
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#### 1990

<table>
<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Thomas D. Christopher</td>
<td>Cardiothoracic Surgical Associates, Richmond, VA</td>
</tr>
<tr>
<td>Michael E. Jessen</td>
<td>Professor and Chairman of the Department of Cardiovascular and Thoracic Surgery, UT Southwestern Medical Center</td>
</tr>
<tr>
<td>James J. Morris</td>
<td>Associate Professor of Surgery, University of North Carolina School of Medicine</td>
</tr>
<tr>
<td>Charles E. Murphy</td>
<td>Assistant Professor of Surgery, Director Cardiothoracic ICU and Stepdown Units, Duke University Medical Center</td>
</tr>
<tr>
<td>John A. Spratt</td>
<td>Cardiothoracic Surgery of Charleston, Charleston, SC</td>
</tr>
<tr>
<td>Bert A. Bowers</td>
<td>Sarasota Memorial Hospital, Sarasota, FL</td>
</tr>
<tr>
<td>H. Kim Lyerly</td>
<td>Professor of Surgery, Assistant Professor in Immunology and Associate Professor of Pathology, Duke University Medical Center</td>
</tr>
<tr>
<td>Raymond G. Makhoul</td>
<td>Surgical Associates of Richmond, Richmond, VA</td>
</tr>
<tr>
<td>George W. Maier</td>
<td>Carolina Cardiovascular &amp; Thoracic Surgery Associates, Gastonia, NC</td>
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## Positions of Chief Residents of Surgery (continued)

### 1989

<table>
<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Ralph H. Damiano Jr.</td>
<td>Professor of Surgery and Chief Division of Cardiothoracic Surgery, Washington University School of Medicine</td>
</tr>
<tr>
<td>James M. Douglas Jr.</td>
<td>Peacehealth Medical Group, Bellingham, WA</td>
</tr>
<tr>
<td>Donald D. Glower Jr.</td>
<td>Professor of Surgery, Duke University Medical Center</td>
</tr>
<tr>
<td>Richard J. Peterson</td>
<td>Riverview Cardiac Surgery, FL</td>
</tr>
<tr>
<td>Stuart J. Knechtle</td>
<td>Professor of Surgery, Emory University School of Medicine</td>
</tr>
<tr>
<td>S. Chace Lottich</td>
<td>Center for Women’s Health, Greenwood, IN</td>
</tr>
<tr>
<td>David H. Mahvi</td>
<td>Professor of Surgery, President Northwestern Medical Group, Northwestern University</td>
</tr>
<tr>
<td>Francis S. Rotolo</td>
<td>Finney Trimble Surgical Associates at Greater Baltimore Medical Center</td>
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### 1988

<table>
<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>T. Bruce Ferguson</td>
<td>East Carolina Heart Institute at ECU, Brody School of Medicine</td>
</tr>
<tr>
<td>Richard D. Floyd IV</td>
<td>St. Joseph Hospital, Lexington, KY</td>
</tr>
<tr>
<td>George S. Tyson Jr.</td>
<td>Thoracic Surgeon, St. Petersburg, FL</td>
</tr>
<tr>
<td>John F. Lucas III</td>
<td>Lucas Surgical Group, Greenwood, MS</td>
</tr>
<tr>
<td>Walter B. Vernon</td>
<td>SurgOne, P.C., Englewood, CO</td>
</tr>
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</table>
Positions of Chief Residents of Surgery (continued)

1987

<table>
<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>William L. Holman</td>
<td>Professor of Surgery, University of Alabama at Birmingham; Chief Surgical Services, Birmingham VA Medical Center</td>
</tr>
<tr>
<td>Robert B. Peyton</td>
<td>Clinical Associate Professor of Surgery, University of North Carolina School of Medicine</td>
</tr>
<tr>
<td>Peter K. Smith</td>
<td>Professor of Surgery and Division Chief, Cardiovascular and Thoracic Surgery, Duke University Medical Center</td>
</tr>
<tr>
<td>Ross M. Ungerleider</td>
<td>Professor of Surgery, Wake Forest Baptist Health</td>
</tr>
<tr>
<td>Warren J. Kortz</td>
<td>Private practice, Denver, CO</td>
</tr>
<tr>
<td>Douglas S. Reintgen</td>
<td>Professor of Surgery, Director of Cancer Initiatives, University of South Florida</td>
</tr>
<tr>
<td>Laurence H. Ross</td>
<td>Finney Trimble Surgical Associates at Greater Baltimore Medical Center</td>
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1986

<table>
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<tr>
<th>Name</th>
<th>Most Prominent Position</th>
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<tbody>
<tr>
<td>Gary K. Lofland</td>
<td>Children's Mercy Hospitals and Clinic, Kansas City, MO</td>
</tr>
<tr>
<td>J. Mark Williams</td>
<td>Chairman, Department of Cardiovascular Sciences, East Carolina Heart Institute at ECU</td>
</tr>
<tr>
<td>Craig O. Olsen</td>
<td>Cardiovascular &amp; Chest Surgical Associates, Boise, ID</td>
</tr>
<tr>
<td>Peter Van Trigt III</td>
<td>Triad Cardiac &amp; Thoracic Surgeons, Greensboro, NC</td>
</tr>
<tr>
<td>Stephen K. Rerych</td>
<td>Pleasant Valley Hospital, Point Pleasant, WV</td>
</tr>
<tr>
<td>Thomas L. Novick</td>
<td>Southeast Surgical Specialists, Charlotte, NC</td>
</tr>
</tbody>
</table>
### Positions of Chief Residents of Surgery (continued)

#### 1984

<table>
<thead>
<tr>
<th>Name</th>
<th>Most Prominent Position</th>
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<tbody>
<tr>
<td>Robert L.R. Wesly</td>
<td>North Florida Regional Med Ctr, Gainesville, FL</td>
</tr>
<tr>
<td>L. George Alexander</td>
<td>Locums Physician, Catawba Piedmont Cardiovascular and Thoracic Surgery, Rock Hill, SC</td>
</tr>
<tr>
<td>Walter R. Chitwood Jr.</td>
<td>Director, East Carolina Heart Institute; Senior Associate Vice Chancellor for Health Sciences, Brody School of Medicine</td>
</tr>
<tr>
<td>Richard A. Hopkins</td>
<td>Endowed Chair in Pediatric Surgery Research and Director, Cardiac Regenerative Surgery Research Laboratories, Children's Mercy Kansas City</td>
</tr>
<tr>
<td>J. Dirk Iglehart</td>
<td>Director, Susan F. Smith Center for Women's Cancers, Dana-Farber Cancer Institute</td>
</tr>
<tr>
<td>Erle H. Austin III</td>
<td>Professor of Surgery, University of Louisville School of Medicine</td>
</tr>
<tr>
<td>James D. Sink</td>
<td>Professor of Surgery, Allegheny University of the Health Sciences, Philadelphia, PA</td>
</tr>
<tr>
<td>Ronald C. Hill</td>
<td>VA Medical Hospital, Asheville, NC</td>
</tr>
<tr>
<td>Robert N. Jones</td>
<td>MidMichigan Physicians Group, Midland, MI</td>
</tr>
<tr>
<td>Peter M. Thurlow</td>
<td>Associated Physicians, Madison, WI</td>
</tr>
<tr>
<td>Bruce D. Schirmer</td>
<td>Professor of Surgery and Vice Chair, Department of Surgery, University of Virginia School of Medicine</td>
</tr>
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#### 1983

<table>
<thead>
<tr>
<th>Name</th>
<th>Most Prominent Position</th>
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<tbody>
<tr>
<td>Lary A. Robinson</td>
<td>Director, Division of Cardiovascular and Thoracic Surgery, H. Lee Moffitt Cancer Center and Research Institute, Tampa, FL</td>
</tr>
<tr>
<td>Peter Scholz</td>
<td>Professor of Surgery, Robert Wood Johnson Medical School</td>
</tr>
<tr>
<td>Jon F. Moran</td>
<td>ECU Physician, Thoracic Surgery, Brody School of Medicine</td>
</tr>
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## Positions of Chief Residents of Surgery (continued)

### 1983

<table>
<thead>
<tr>
<th>Name</th>
<th>Most Prominent Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thomas L. Spray</td>
<td>Chief, Division of Cardiothoracic Surgery, Endowed Chair in Pediatric Cardiothoracic Surgery, The Children's Hospital of Philadelphia</td>
</tr>
<tr>
<td>Charles E. Cox</td>
<td>CEO, Breast Health CRISP (Clinical and Research Integrated Strategic Program); McCann Foundation Endowed Professor of Breast Surgery, USF Health, Tampa, FL</td>
</tr>
<tr>
<td>Richard L. McCann</td>
<td>Professor of Surgery, Duke University Medical Center; Assistant Chief of Surgery, Veterans Administration Medical Center</td>
</tr>
<tr>
<td>William C. Meyers</td>
<td>Founder, Vincera Institute, Philadelphia, PA</td>
</tr>
<tr>
<td>Arthur J. Ross III</td>
<td>Dean, West Virginia University School of Medicine</td>
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### 1980

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<tr>
<th>Name</th>
<th>Most Prominent Position</th>
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<tbody>
<tr>
<td>John C. Alexander</td>
<td>Professor of Clinical Surgery, University of Chicago</td>
</tr>
<tr>
<td>Stephen A. Mills</td>
<td>Associate Professor of Surgery, University of North Carolina School of Medicine</td>
</tr>
<tr>
<td>Norman A. Silverman</td>
<td>Henry Ford Health System, Detroit, MI</td>
</tr>
<tr>
<td>R. Randal Bollinger</td>
<td>Professor of Surgery, Duke University Medical Center (Retired)</td>
</tr>
<tr>
<td>R. Morton Bolman</td>
<td>Professor of Surgery, Harvard Medical School</td>
</tr>
<tr>
<td>George A. Parker</td>
<td>Commonwealth Surgeons, Richmond, VA</td>
</tr>
<tr>
<td>James E. Lowe</td>
<td>Professor of Surgery and Professor of Pathology, Duke University Medical Center</td>
</tr>
<tr>
<td>W. Robins Howe</td>
<td>Founder, Director Cardiac Surgery Program, Western Baptist Hospital, Paducah, KY; Clinical Faculty, University of Louisville &amp; University of Kentucky</td>
</tr>
<tr>
<td>J. Scott Rankin</td>
<td>Associate Clinical Professor, Vanderbilt University Medical Center</td>
</tr>
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Positions of Chief Residents of Surgery (continued)

1980

<table>
<thead>
<tr>
<th>Name</th>
<th>Most Prominent Position</th>
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</thead>
<tbody>
<tr>
<td>Walter D. Holder Jr.</td>
<td>Polyclinic, Seattle, WA</td>
</tr>
<tr>
<td>Richard M. Larson</td>
<td>Clinical Associate Professor, East Carolina University</td>
</tr>
<tr>
<td>Charles H. Edwards II</td>
<td>Hawthorne Cardiovascular Surgeons, Charlotte, NC</td>
</tr>
<tr>
<td>W. Peter Graper</td>
<td>Sarasota Cardiovascular-Thoracic, Sarasota, FL</td>
</tr>
<tr>
<td>Thomas H. Marsicano</td>
<td>Cardiac surgeon, Savannah, GA</td>
</tr>
<tr>
<td>John B. Hanks</td>
<td>Professor of Surgery, University of Virginia School of Medicine</td>
</tr>
<tr>
<td>Jeffrey A. Norton</td>
<td>Professor of Surgery and Chief of Oncologic and General Surgery, Stanford University</td>
</tr>
<tr>
<td>Worthington G. Schenk III</td>
<td>Professor of Surgery, University of Virginia School of Medicine</td>
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1979

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<thead>
<tr>
<th>Name</th>
<th>Most Prominent Position</th>
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<tbody>
<tr>
<td>Lynn H. Harrison</td>
<td>Professor and Chief, Cardiothoracic Surgery, University of Massachusetts Medical School</td>
</tr>
<tr>
<td>William C. DeVries</td>
<td>Clinical Professor of Surgery, George Washington School of Medicine and Health Sciences</td>
</tr>
<tr>
<td>Dana K. Anderson</td>
<td>Professor and Vice-Chair of Surgery, Johns Hopkins; Surgeon-in-Chief, Johns Hopkins-Bayview Medical Center</td>
</tr>
<tr>
<td>George S. Leight Jr.</td>
<td>Professor of Surgery, Duke University Medical Center</td>
</tr>
<tr>
<td>Bruce M. Smith</td>
<td>Associate Professor of Surgery, Georgetown University School of Medicine</td>
</tr>
</tbody>
</table>
## Positions of Chief Residents of Surgery (continued)

### 1978

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<thead>
<tr>
<th>Name</th>
<th>Most Prominent Position</th>
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<tbody>
<tr>
<td>James L. Cox</td>
<td>Chairman and Chief Executive Officer, World Heart Foundation; Emeritus Professor of Surgery, Washington University School of Medicine</td>
</tr>
<tr>
<td>John W. Hammon</td>
<td>Professor of Surgery, Wake Forest University School of Medicine</td>
</tr>
<tr>
<td>John P. Grant</td>
<td>Professor of Surgery and Director of the Bariatric Surgery Program, Duke University Medical Center</td>
</tr>
<tr>
<td>Gregory S. Georgiade</td>
<td>Professor of Surgery, Chief of Division of Plastic Surgery, and Vice Chair of Department of Surgery, Duke University Medical Center</td>
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<tr>
<td>David K. Wellman</td>
<td>Chief Medical Officer, United Emergency Services, Durham, NC</td>
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### 1977

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<tr>
<th>Name</th>
<th>Most Prominent Position</th>
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<tr>
<td>Kent W. Jones</td>
<td>Clinical Professor of Surgery, University of Utah; Surgeon, Intermountain Healthcare and Intermountain Medical Center</td>
</tr>
<tr>
<td>Roger C. Millar</td>
<td>Intermountain Cardiovascular, St. George, UT</td>
</tr>
<tr>
<td>William R. Beltz</td>
<td>Susquehanna Health Wound Healing Center, Williamsport, PA</td>
</tr>
<tr>
<td>Richard A. Perryman</td>
<td>Chief of Cardiac Surgical Service, Memorial Healthcare System, Hollywood, FL</td>
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### 1976

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<tr>
<th>Name</th>
<th>Most Prominent Position</th>
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<tbody>
<tr>
<td>Fred A. Crawford Jr.</td>
<td>Distinguished University Professor, Medical University of South Carolina</td>
</tr>
<tr>
<td>M. Wayne Flye</td>
<td>Chief, Thoracic Surgery, St. Louis Veterans Administration Hospital; Chief of Surgery, Saint Louis Connect Care Health Systems</td>
</tr>
<tr>
<td>John W. Yarbrough</td>
<td>Thoracic Cardiovascular Assoc, Columbia, SC</td>
</tr>
<tr>
<td>Lewis H. Stocks III</td>
<td>Stocks Surgical Center, Raleigh, NC</td>
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</table>
Positions of Chief Residents of Surgery (continued)

1976

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<thead>
<tr>
<th>Name</th>
<th>Most Prominent Position</th>
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<tbody>
<tr>
<td>Robert P. Barnes</td>
<td>Department Chair, Cardiovascular Services, St. Luke’s Hospital, Boise, ID</td>
</tr>
<tr>
<td>Richard O. Gregory</td>
<td>Private practice, plastic surgery, Orlando, FL</td>
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1975

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<tr>
<th>Name</th>
<th>Most Prominent Position</th>
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<tbody>
<tr>
<td>Thomas M. Daniel</td>
<td>Chief, Section of General Thoracic Surgery, University of Virginia</td>
</tr>
<tr>
<td>Robert H. Jones</td>
<td>Professor of Surgery, Duke University Medical Center</td>
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1974

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<tr>
<th>Name</th>
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<tbody>
<tr>
<td>James A. Alexander</td>
<td>Professor of Surgery, University of Florida College of Medicine</td>
</tr>
<tr>
<td>Andrew S. Wechsler</td>
<td>Professor of Surgery, Drexel University College of Medicine</td>
</tr>
<tr>
<td>Kenneth P. Ramming</td>
<td>Professor of Surgery, UCLA</td>
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1973

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<tr>
<th>Name</th>
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<tr>
<td>Sewell H. Dixon</td>
<td>President &amp; CEO, St. Kitts Medical, Inc.</td>
</tr>
<tr>
<td>S. Kirby Orme</td>
<td>Cardiovascular &amp; Chest Surgical Associates, Boise, ID</td>
</tr>
<tr>
<td>James C.A. Fuchs</td>
<td>Union Memorial Hospital, Baltimore, MD</td>
</tr>
<tr>
<td>Bradley M. Rogers</td>
<td>Primary Care Center, Charlottesville, VA</td>
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Positions of Chief Residents of Surgery (continued)

1972

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<tr>
<th>Name</th>
<th>Most Prominent Position</th>
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<tbody>
<tr>
<td>Don E. Detmer</td>
<td>University Professor of Health Policy Emeritus and Professor of Medical Education, University of Virginia</td>
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1971

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<tr>
<th>Name</th>
<th>Most Prominent Position</th>
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<tbody>
<tr>
<td>C. Linwood Puckett</td>
<td>University of Missouri Health System, Columbia, MO</td>
</tr>
<tr>
<td>Robert E. Cline</td>
<td>President of Cline Cardiovascular Associates, FL</td>
</tr>
<tr>
<td>William A. Gay Jr.</td>
<td>Professor Emeritus of Surgery, Washington University School of Medicine</td>
</tr>
<tr>
<td>Robert W. Anderson</td>
<td>Chairman of Surgery, Duke University Medical Center</td>
</tr>
<tr>
<td>Walter G. Wolfe</td>
<td>Professor of Surgery, Duke University Medical Center; Chief of Thoracic Surgery, VA Medical Center</td>
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1970

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<tr>
<th>Name</th>
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<tbody>
<tr>
<td>H. Newland Oldham Jr.</td>
<td>Professor of Surgery, Duke University Medical Center (Retired)</td>
</tr>
<tr>
<td>John M. Porter</td>
<td>Chief of Vascular Surgery, University of Oregon</td>
</tr>
<tr>
<td>Samuel A Wells Jr.</td>
<td>Chairman of Surgery, Washington University</td>
</tr>
</tbody>
</table>
Duke surgery residents typically take on academic projects during their time in training. This is best exemplified by their peer-reviewed publications. To assist the applicant in understanding the academic engagement typical of a Duke resident, the publications for the chief residents from the two most recent graduating classes is provided.

**Graduating Chief Residents**

**2014–2015**

**2013–2014**


Andersen ND, Pal JD, Lodge AJ. “Atrial septal defect repair by inversion of a juxtaposed left atrial appendage.” Cardiol Young. 2012 Feb;22(1):103-5.


Shah AA, Desai BS, Samad Z, Jollis JG, Glower DD. “Comparison of need for operative therapy in patients with mitral valve prolapse involving both leaflets versus posterior leaflet only.” Am J Cardiol. 2012 Nov 1;110(9):1350-3.


Berger PB, Williams JB, Hasselblad V, Chiswell K, Pieper KS, Califf RM. “Would tirofiban have been shown non-inferior to abciximab had the TENACITY trial not been terminated for financial reasons?” J Interv Cardiol. 2013 Apr;26(2):123-30.


Current Residents 2016 (by anticipated year of graduation)

Anthony Castleberry, M.D.
M.D., University of Pittsburgh School of Medicine
B.A., Hillsdale College - Business Finance

Kristy Rialon Guevara, M.D.
M.D., Harvard Medical School
B.A., Rice University - Biochemistry

Jennifer Hanna, M.D.
M.D., Duke University School of Medicine
B.S., University of Southern California - Health Promotion and Disease Prevention

Georgios Kokosis, M.D.
M.D., University of Athens Medical School

Michael Lidsky, M.D.
M.D., Georgetown University School of Medicine
B.S., University of California, San Diego - Animal Physiology and Neuroscience
Current Residents 2016 (continued)

**Kevin Southerland, M.D.**
M.D., University of Pennsylvania School of Medicine
B.S., Duke University Medical Center - Biology

Current Residents 2017

**Hamza Aziz, M.D.**
M.D., Duke University School of Medicine
B.A., Duke University - Chemistry

**Brian Englum, M.D.**
M.D., Johns Hopkins University School of Medicine
B.S., Indiana University - Biology
B.A., Indiana University - Religious Studies

**Asvin Ganapathi, M.D.**
M.D., Case Western Reserve University School of Medicine
B.S., Stanford University - Engineering - Aeronautics/Astronautics
Current Residents 2017 (continued)

Brandon Henry, M.D., M.P.H.
M.D., University of Pennsylvania School of Medicine
M.P.H., Rollins School of Public Health - Emory University
B.S., Howard University - Biology

Mohan Mallipeddi, M.D.
M.D., Vanderbilt University School of Medicine
B.S., Stanford University - Biological Sciences

Matthew Schechter, M.D.
M.D., Duke University School of Medicine
B.A., Haverford College - Biology

Paul Speicher, M.D.
M.D., Northwestern University Feinberg School of Medicine
B.A., University of Virginia - Physics & Biology
Current Residents 2018

Mohamed O. Abdelgadir Adam, M.D.
M.B.B.S., Omdurman Islamic University

Robert Patrick Davis, M.D., Ph.D.
M.D., Michigan State University College of Human Medicine
Ph.D., Michigan State University
B.A., Kalamazoo College - Health Sciences

Brian Gulack, M.D.
M.D., University of Pittsburgh School of Medicine
B.S., Union College - Biochemistry/Economics

Jeffrey Keenan, M.D.
M.D., University of Maryland School of Medicine
B.S., University of North Carolina at Chapel Hill - Chemistry

Christopher Cameron McCoy, M.D.
M.D., Emory University School of Medicine
B.S., Duke University - Biology
Current Residents 2018 (continued)

Mithun Shenoi, M.D.
M.D., University of Minnesota Medical School
B.S., Carnegie Mellon University – Chemical & Biomedical Engineering

Chi-fu Jeffrey Yang, M.D.
M.D., Harvard Medical School
B.A., Harvard College - Biochemistry

Current Residents 2019

Ehsan Benrashid, M.D.
M.D., University of Virginia School of Medicine
B.S., Clemson University - Biochemistry

Jina Kim, M.D.
M.D., University of Michigan Medical School
B.S., Massachusetts Institute of Technology - Materials Science & Engineering
Current Residents 2019 (continued)

Daniel Nussbaum, M.D.
M.D., Keck School of Medicine of the University of Southern California
B.S., University of Wisconsin–Madison - English–Creative Writing, Political Science

Adam Shoffner, M.D.
M.D., Yale University School of Medicine
B.S., University of Kansas - Microbiology

Zhifei Sun, M.D.
M.D., University of Texas Southwestern Medical School
B.A., Rice University - Biochemistry & Cell Biology

Hanghang Wang, M.D.
M.D., Dartmouth Medical School
B.A., Grinnell College – Biology

Linda Youngwirth, M.D.
M.D., University of Wisconsin Medical School
B.S., University of Wisconsin - Chemistry
Current Residents 2020

James Meza, M.D.
M.D., University of Michigan Medical School
B.A., Princeton University – Molecular Biology

Michael Mulvihill, M.D.
M.D., Duke University School of Medicine
B.A., Pomona College - Neuroscience

David Ranney, M.D.
M.D., University of Michigan Medical School
B.S.E., University of Michigan - Chemical Engineering

Shanna Sprinkle, M.D.
M.D., Raymond and Ruth Perelman School of Medicine, University of Pennsylvania
B.S.E., Johns Hopkins University - Biomedical Engineering

Alice Wang, M.D.
M.D., Duke University School of Medicine
B.A., University of Chicago - Biological Sciences
Current Residents 2020 (continued)

Patrick Upchurch, M.D.
M.D., University of Virginia School of Medicine
B.S., University of Florida – Applied Physiology and Kinesiology; Nutritional Science

Babatunde Yerokun, M.D.
M.D., The Pritzker School of Medicine, University of Chicago
B.A., Stanford University, Human Biology

Current Residents 2021

Morgan Cox M.D.
M.D., Indiana University School of Medicine
B.S., Butler University - Chemistry

Brian Ezekian M.D.
M.D., University of Virginia School of Medicine
B.S., Pennsylvania State University - Biology
Current Residents 2021 (continued)

Brian Gilmore, M.D.
M.D., Duke University School of Medicine
B.S., Emory University - Biology

Uttara Nag, M.D.
M.D., University of Pittsburgh School of Medicine
B.S., Columbia University - Biomedical Engineering

Cecilia Ong, M.D.
M.D., Duke University School of Medicine
B.S., Yale University - Molecular, Cellular, and Developmental Biology

Megan Turner M.D.
M.D., University of Washington School of Medicine
B.S., University of Washington - Environmental and Occupational Health Sciences
Current Residents 2022

Justin Barr, M.D., Ph.D.
M.D., University of Virginia School of Medicine
Ph.D., Yale University
B.A., Washington University – History

Whitney Lane, M.D.
M.D., Duke University School of Medicine
B.S., Duke University – Psychology

Carrie Moore, M.D., Ph.D.
M.D., Vanderbilt University School of Medicine
Ph.D., Vanderbilt University
B.S., Massachusetts Institute of Technology – Nuclear Science and Engineering

Paul Schroder, M.D., Ph.D.
M.D., The University of Toledo College of Medicine
Ph.D., The University of Toledo College of Medicine
B.S., John Carroll University – Chemistry

Karenia Soto, M.D.
M.D., University of Miami Leonard M. Miller School of Medicine
B.A, Harriet Wilkes Honors College, Florida Atlantic University – Biological Chemistry
Current Residents 2022 (continued)

Joshua Watson, M.D., M.A.
M.D., Johns Hopkins University School of Medicine
M.A., Georgetown University
B.S., Georgetown University – Foreign Service (International Economics)

John Yerxa, M.D.
M.D., Duke University School of Medicine
B.S., Duke University – Biology
Educational and Research Labs

An internationally recognized leader in laboratory and clinical investigation, the Duke Department of Surgery receives over $35 million dollars of grant and award funding each year. It has been the top department of surgery recipient of NIH awards for over 20 years.

Our team of over 200 faculty members publish hundreds of articles annually in peer-reviewed journals, disseminating key findings and insights far beyond our walls.

We welcome the contributions of our residents in advancing the science of surgery in our education and research labs.

Highlights of research performed at Duke Surgery follow. Find more information at surgery.duke.edu.
Surgical Education and Activities Lab

Ranjan Sudan, M.D.
Associate Professor of Surgery
Associate Professor in Psychiatry and Behavioral Sciences
Vice Chair of Education, Department of Surgery
SEAL Medical Director

The Surgical Education and Activities Lab (SEAL) is a state-of-the-art surgical simulation center designed to provide advanced and innovative training. The SEAL is accredited as a Level 1 Comprehensive Education Institute (CEI) by the American College of Surgeons.

Simulation training provides learners the opportunity to develop skills and practice minimally invasive procedures without the pressures of the operating room to advance medical education and improve patient safety.

Simulation training plays a key role in the general surgery residency program, providing residents with round-the-clock access to minimally invasive laparoscopic surgical simulators, virtual reality laparoscopic surgical simulators, and endoscopy simulators for practicing flexible bronchoscopy, upper and lower gastrointestinal (GI) flexible endoscopy procedures. Basic and advanced robotic surgery skills courses are available to assist trainees in learning core skills requirements as well as more advanced skills.

The SEAL management team, in collaboration with industry partners, is involved in extensive research with the goal of evaluating the effectiveness of training methods and technology for surgical skills training. Several funded research projects are underway or have been completed.
Duke Human Fresh Tissue Laboratory

Michael R. Zenn, M.D.
Professor of Surgery
Director, Human Fresh Tissue Laboratory
Director, Gross Anatomy Program
Residency Program Director, Plastic Surgery
Vice Chief, Plastic and Reconstructive Surgery

The Duke Human Fresh Tissue Laboratory is a state-of-the-art medical skills lab where residents, attending physicians, and medical students can perform advanced surgical training on fresh tissue.

The lab has been used to provide training to medical professionals from Duke and throughout the country since 1997.

The 2,000-square-foot lab consists of 15 stations and up-to-date operating room equipment, providing capacity for large educational courses.

3D Printing Lab

Tawfiq Khoury M.D.
Duke Otolaryngology Head and Neck Surgery

The Duke 3D printing lab offers unique research and educational experiences for surgical trainees. We have many printers that can be accessed remotely from anywhere and higher end printers located just next to the Duke Medicine Pavilion. We also have state-of-the-art software and a partnership with the multi-D lab for help with segmentation, which is the process of picking out particular areas of anatomical interest for printing.

We currently have multiple active areas of investigation, including cardiac prints for congenital abnormalities and left atrial appendage occlusion devices, aortic prints for valve replacement and aneurism repair, and prints of the facial skeleton for plate sizing during traumatic fracture repair, among many others. We are always open to new resident ideas, and I'm happy to work with residents and personally teach them how to work their way through the 3D printing process.
Aptamer Development for Pancreatic Cancer Diagnosis and Treatment

Rebekah White, M.D.
Associate Professor of Surgery

Partha Ray, Ph.D.
Post-doctoral Fellow

Janoo Naqvi
Medical Science Training Program Student

The goal of the Dr. White’s lab is to identify novel therapeutic and diagnostic agents for GI malignancies. We share lab resources and work closely with Bruce Sullenger and other members of the Molecular Therapeutics Program. Most of our research is centered on nucleic acid therapeutics, in particular a class of artificial oligonucleotide ligands known as aptamers, which bind protein targets with high affinity and specificity, comparable to antibodies. The lab is exploring different ways to use aptamers that bind to cell surface proteins to deliver cytotoxic cargo specifically to cancer cells. Although aptamers are usually generated against known, rationally chosen proteins, we have also demonstrated that you can use aptamers as proteomic tools to identify potential protein biomarkers that are overexpressed in complex mixtures.

Another area of interest in our lab is how circulating nucleic acids affect tumor progression and tumor-associated thrombosis. We are using nucleic acid binding polymers to scavenge endogenous nucleic acids and prevent their detrimental effects on thrombosis and metastasis. We are also trying to utilize the innate immune system by delivering highly immunogenic nucleic acids directly into tumor cells to induce cell death.

The work in our lab is “translational” and includes the use of specimens derived from patients to the bench, basic in vitro discovery work, and validation studies in animal models. Most of our work has been focused on pancreatic cancer, Dr. White’s primary clinical interest.

Selected publications


Cardiovascular Functional Lab and Gastric Reflux and Post-transplant Lung Function

Shu S. Lin, M.D., Ph.D.
Associate Professor of Surgery
Associate Professor in Pathology
Assistant Professor in Immunology

William Parker, Ph.D.
Associate Professor of Surgery

Pulmonary allotransplantation is the primary means of treating some end-stage lung diseases, including chronic obstructive pulmonary disease, idiopathic pulmonary fibrosis, and cystic fibrosis. Unfortunately, the development of chronic allograft failure occurs earlier, more frequently, and contributes to mortality more commonly in lung transplant recipients than other solid organ transplant recipients. Extensive data, both in patients and in a rodent model of lung transplantation, indicate that chronic lung allograft failure is often associated with early ischemia-reperfusion injury and/or repetitive aspiration-related lung injury as a result of gastroesophageal reflux.

The Lin/Parker laboratory has developed an experimental model of pulmonary transplantation that captures the clinical milieu in several important aspects. Using a WKY-to-F344 rat lung transplant, in the face of experimentally induced chronic aspiration, the development of obliterative bronchiolitis (OB), the most typical histologic hallmark of chronic lung allograft failure, is consistently observed. Our ongoing studies have revealed that the development of OB in this model is dependent on a three-hit injury involving (a) ischemia-reperfusion injury, (b) alloimmunity, and (c) chronic aspiration.

The Lin/Parker laboratory has very recently identified an apparently critical role of mast cells in pulmonary allograft failure, both peri-operatively and in the development of OB. The lab is currently working to further elucidate the role of mast cells in pulmonary allograft dysfunction by evaluating the role of mast cell activation in the pathology associated with ischemia-reperfusion injury with and without chronic gastric fluid aspiration, exploring effector molecules produced by mast cells, aimed at dissecting the particular mechanisms by which mast cells influence pulmonary transplant pathology, and define the temporal features of mast cell activation (e.g., acute versus chronic) in a matter that will facilitate translation of these results into the clinic. Since pulmonary physiology is profoundly modified by aspiration of gastric fluid, both in acute situations and in chronic settings, the Lin/Parker laboratory is undertaking the assessment of gastrointestinal-associated analytes in gastric fluid and their temporal stability once in the pulmonary environment to provide clinicians with more accurate information regarding which analytes would be most useful to measure and how long they may remain active and measurable once in the lung.
Cardiovascular Functional Lab and Gastric Reflux and Post-transplant Lung Function (continued)

Selected publications


Parker, W. “The ‘Hygiene Hypothesis’ for allergic disease is a misnomer.” *British Medical Journal*. 349:g5267, 2014.


Clinical Research Skills Development Program

Peter K. Smith, M.D.
Professor of Surgery
Division Chief, Cardiovascular and Thoracic Surgery

The Duke University Clinical Research Skills Development Program for surgical residents and junior faculty was created to train future cardiothoracic surgeons in the skills of clinical research. It is supported by the National Heart Lung and Blood Institute, and provides funding for tuition and mentorship in clinical research. The program provides didactic and experience-based education in biostatistics, research design, research management, and the ethical conduct of research among other important topics for today's clinician-researcher. Utilizing resources from Duke Clinical Research Institute (DCRI) and the joint Duke-NIH Clinical Research Training Program (CRTP), the Clinical Research Skills Development Program fosters a better understanding of how to perform multiple types of clinical research.

The program director and principal investigator is Dr. Peter K. Smith, Professor of Surgery and Chief of Cardiovascular and Thoracic Surgery at Duke University. Dr. Smith has been involved in numerous clinical trials as well as being a member of the Cardiothoracic Surgical Trials Network (CTSN) steering committee. The co-program director is Dr. John H. Alexander, Associate Professor of Medicine and Co-Director of Cardiovascular Research at the DCRI. He is a previous graduate of the Duke-NIH CRTP program, and has extensive experience in the management and execution of clinical trials.

Each trainee who is selected to complete the Clinical Research Skills Development Program receives formal training via the CRTP program as well as extensive experience through multiple resources present at the DCRI. The expected training time is two-academic years, although this may be extended for junior faculty who have extensive clinical obligations.
Clinical Research Skills Development Program (continued)

Selected publications


Duke Center for Aortic Disease Research Program

G. Chad Hughes, M.D.
Associate Professor of Surgery
Director, Aortic Surgery Program

The goal of the Center for Aortic Disease is to further our understanding of the pathophysiology of aortic diseases, develop better surgical and non-surgical treatments, and improve short and long-term outcomes after thoracic aortic surgery.

Areas of interest

Treatment and outcomes of acute and chronic aortic dissection
- Risk factors for Type A dissection
- Decision analysis for Type A dissection management
- Management and outcomes of acute and chronic Type A dissection repair
- Management of acute and chronic Type B dissection
- Understanding aortic remodeling in Type B dissection

Improving outcomes after proximal aortic surgery
- Perioperative risk stratification in proximal aortic surgery
- Cerebral protection strategies in proximal aortic surgery
- Circulation management strategies in proximal aortic surgery
- Predictors and management of intraoperative bleeding
- Use of novel bleeding adjuncts in aortic surgery to improve postoperative outcomes
- Contemporary results for proximal aortic replacement
- Imaging surveillance guidelines after proximal aortic surgery

Improving outcomes after thoracic endovascular aortic repair (TEVAR)
- Endovascular repair of descending thoracic aortic aneurysms
- “Hybrid” combined endovascular and less invasive open approaches to repair of aortic arch and thoracoabdominal aortic pathology
- Spinal cord protection strategies in thoracic aortic repair
- Complications of TEVAR
- Risk factors for mortality and perioperative morbidity after TEVAR
- Results of TEVAR 10 years after FDA approval
- Results with TEVAR for chronic Type B aortic dissection

Developing and advancing transcatheter aortic valve replacement (TAVR)
- Transcatheter aortic valve replacement with a self-expanding prosthesis
- Comparison of short- and mid-term results of balloon-expandable vs. self-expanding TAVR
- Learning curve for TAVR
- Femoral access in TAVR
- Use of 3D printing for TAVR sizing
Understanding the impact of socioeconomic factors on outcomes after thoracic aortic surgery
  - Insurance status and outcomes of proximal aortic surgery

Management of bicuspid aortic valve (BAV) disease and genetically-triggered aortic pathologies
  - Individualized thoracic aortic replacement for BAV
  - Thoracic aortic repair in Loeys-Dietz and Marfan syndrome
  - Imaging surveillance and need for operation/reoperation in patients with genetically triggered aortic pathologies

Understanding the Genetic Basis Underlying Thoracic Aortic Aneurysms (TAA)
  - Aortic tissue biorepository
  - Plasma biomarkers for distinguishing subtypes of TAA
  - Genomic and metabolomic profiling of TAA

Selected resident publications


Duke Endocrine Neoplasia Diseases Research Group

Julie A. Sosa, M.D., M.A., F.A.C.S.
Professor of Surgery and Medicine (Oncology)
Chief of Endocrine Surgery
Director of Health Services Research in Surgery
Leader of the Endocrine Neoplasia Diseases Group at the Duke Cancer Institute and the Duke Clinical Research Institute

Sanziana A. Roman, M.D., F.A.C.S.
Professor of Surgery
Director of the Endocrine Surgery Fellowship Program
Chief of General Surgery, Durham VAMC

Additional faculty
Randall P. Scheri, M.D.               Michael Stang, M.D.
Shelby D. Reed, Ph.D., R.Ph.          Terry Hyslop, Ph.D.
Jennifer Perkins, M.D.                Michaela Dinan Ph.D.
James Koh, Ph.D.                      Samantha Thomas, M.S.

The Duke Endocrine Neoplasia Research Group is a transdisciplinary research group that is committed to providing high-quality research and training in the field of endocrine neoplasia. The group comprises surgeons, endocrinologists, radiation oncologist, residents, fellows, health services researchers, epidemiologists, psychologists, biostatisticians, and basic scientists. The multidisciplinary nature of this group makes it ideal to tackle the pressing issues of endocrine neoplasms and work toward bridging gaps in patient care at the individual and population levels, including translational research.

Our research is focused on the different diseases of the thyroid, parathyroid, pancreas, and adrenal glands. We are part of a larger platform of research in surgical oncology, incorporating translational research, environmental impact on disease and epidemiology, and health services research in various disease processes, such as thyroid cancer, pancreatic cancer, melanoma, breast cancer, etc. We are committed to training the next generation of clinical investigators by combining multidisciplinary expertise with close and sustained mentorship.
Duke Endocrine Neoplasia Diseases Research Group (continued)

Selected projects

Thyroid cancer
Thyroid cancer is the fastest increasing of all cancers in the United States. The incidence of thyroid cancer is expected to continue rising. It is anticipated that thyroid cancer will become the third most incident cancer among women, overtaking uterine and colon cancer. Using national databases, our effort is focused on:

• Optimal extent of surgical resection for differentiated thyroid cancer in adults and children
• Role of age in disease severity and selection for treatment of differentiated thyroid cancer
• Prognostic role of lymph node metastases in differentiated thyroid cancer and medullary thyroid cancer
• Utilization and oncologic safety of alternative surgical approaches such as robotic and endoscopic thyroidectomy

Pancreas and adrenal gland
We are interested in discerning optimal management of pancreatic neuroendocrine tumors and tumors of the adrenal gland. While these clinical entities are rare, their incidence is increasing. Utilizing large administrative databases afford a unique opportunity at investigating and better understanding the natural history and optimal management of these rare tumors.

Clinical trials
• Selumetinib
• Fosbretabulin
• Thyroid cancer and polybrominated diphenyl ether (PBDE) exposure, Duke Cancer Institute and Nicholas School of the Environment, Duke University.

Translational research
Our research laboratory collaborates closely for various projects with the Koh Laboratory, with whom studies currently include:

• An active NIH-funded collaboration with of the DENRG and a bioengineering team at UNC led by Dr. Nancy L. Allbritton to develop a novel live-cell imaging device for functional analysis of surgical biopsy tissue;
• An ongoing NIH-funded study to characterize a novel conditional expression transgenic mouse strain we developed as a model of primary hyperparathyroidism;
• A collaborative translational project with Dr. Allbritton to conduct single-cell imaging studies examining the functional consequences of intratumoral heterogeneity in human parathyroid tumors.
Duke Surgical Center for Outcomes Research (Duke SCORES)

Julie A. Sosa, M.D., M.A., F.A.C.S.
Professor of Surgery and Medicine (Oncology)
Chief of Endocrine Surgery
Director of Health Services Research in Surgery
Leader of the Endocrine Neoplasia Diseases Group
at the Duke Cancer Institute and the Duke Clinical Research Institute

Leila Mureebe, M.D., M.P.H.
Associate Professor of Surgery

Charles D. Scales Jr., M.D., M.S.H.S.
Assistant Professor of Surgery

Betty C. Tong, M.D., M.H.S., M.S.
Associate Professor of Surgery

David L. Witsell, M.D., M.H.S.
Professor of Surgery

Health services research (HSR) is the branch of population health science that addresses best processes and practices to optimize patient care. Innovations through HSR can facilitate optimal health care delivery at the population level, health system level, and individual patient level.

Duke SCORES (Surgical Center for Outcomes Research) is a novel, transdisciplinary effort that promotes excellence in HSR for various surgical patient populations. Duke SCORES will serve as a hub for education, research, mentorship, and resources to enable trainees and faculty to ask and answer questions with direct translational relevance to clinical research, patient care, safety, and quality improvement.

Our goals

• Support surgical faculty and trainees (including residents, fellows, and medical students) interested in HSR, and provide house staff with skills to engage in outcomes research.

• Provide resources for current and future investigators by establishing a central library of current datasets and other pertinent software.

• Educate investigators interested in HSR through alignment and expansion of an existing educational platform that will leverage the work of thought leaders across Duke University Medical Center and Duke University.

• Recognize excellence in surgical outcomes research by highlighting work done both within the Department of Surgery and by nationally prominent visiting professors.
Evidence-Based Perioperative Care Implementation Laboratory for Enhanced Recovery and Patient Engagement

Julie Marosky Thacker, M.D.
Assistant Professor of Surgery
Medical Director, Enhanced Recovery Program

Christopher Mantyh, M.D.
Professor of Surgery
Chief, Gastrointestinal and Colorectal Surgery

Evidence-Based Perioperative Care Implementation Laboratory is an interdisciplinary group led by faculty in the Department of Surgery with the aim of implementing evidence for the best care of surgical patients. Including the department’s patient and family engagement and enhanced recovery efforts, the group created and manages the care of colorectal, pancreas, hepatobiliary, gynecologic oncology, urology, transplant, general, and plastic surgery patient paths.

Additionally, patient and family engagement projects, including team building seminars, implementation training, and survey auditing, are promoted by this effort. In alignment with anesthesia and nursing, surgeons constantly critique and consistently produce best practice literature. Implementation and auditing of best practices and process measures is performed in conjunction with the department’s Surgical Outcomes and Quality Laboratory.

Faculty members are active on the national level with American College of Surgeons, American Society of Enhanced Recovery, American Society of Anesthesiologists, Association of Operating Room Nurses, the American Society of Colon and Rectal Surgery, and the American Urological Association. These collaborations make available educational programs, trainee project grants, and practice parameter guidelines.

Current projects include:

- Best practices and implementation in a learning health care system
- Enhanced recovery – colorectal surgery
- Enhanced recovery – urology
- Enhanced recovery – gynecologic oncology
- Enhanced recovery – plastic surgery reconstruction and free flap
- Enhanced recovery – living related kidney donor
- Enhanced recovery – hepatectomy
- Enhanced recovery – pancreatectomy
- Enhanced recovery – general surgery
- Enhanced recovery in geriatrics
- Patient-family centered rounds in surgery
- Patient and surgeon level cost analysis
- Process measures development
Evidence-Based Perioperative Care Implementation Laboratory for Enhanced Recovery and Patient Engagement (continued)

Key personnel include:

Timothy Miller, M.D., Department of Anesthesia
Robin Anderson, R.N., Duke University Health System Performance Services
Zhifei Sun, M.D.
Adam Shoffner, M.D.
Mohamed Adam, M.D.
Jeff Keenan, M.D.
Lacey Lee, Pharm.D.

Selected publications


Geriatric Initiatives in Surgery

Perioperative Optimization of Senior Health (POSH) Program

For the past several, teams from geriatrics, general surgery, and anesthesiology at Duke University Hospital (DUH) have collaborated to develop a perioperative care model based on recently published guidelines for pre-operative assessment of older adults and evidence from care of hip fracture patients and the hospitalized elderly. Our aim has been to optimize care and improve outcomes for high-risk older adults who undergo surgery at Duke.

The POSH program is designed to identify older adults vulnerable to postoperative complications and provide supportive care and pre- and post-operative interventions to prevent complications such as delirium, falls, infections, immobility, poor nutrition, under treated pain, or over medication. The program involves a single preoperative assessment by geriatrics and anesthesia and postoperative management by a multidisciplinary team. In addition to assisting with medical management and preventing complications, the program providers focus on anticipating care needs in the postoperative and post-acute periods and assisting with care transitions.

High-risk criteria in elderly patients being evaluated for surgery include any of the following:

- Age over 85
- Patients between 65 and 85 years of age with any of the following trigger factors:
  - Diagnosis of dementia or cognitive decline
  - Poor nutritional status: recent weight loss of 5 percent or more in one year, low BMI <21
  - Visual impairment worse than 20/70 binocular with correction
  - Frailty (as determined by surgeon)
  - Multiple chronic diseases and/or more than 5 prescription medications, warfarin, oxygen, substance abuse, active psychiatric illness

This collaboration between surgeons, geriatricians, nurses, nurse practitioners, and social workers has offered a coordinated, patient-centered strategy for perioperative co-management of geriatric patients. Analysis of outcomes for patients from the first two years revealed reductions in length of stay, readmissions, and discharge to skilled care when compared to a historical comparison group. While these results are promising, we also realize that with refinement of protocols and process, we may be able to achieve even better outcomes.

Building on the experience at Duke, we have recently established a similar program of care at Durham Veteran’s Administrative Center, but with a broader mission to educate trainees across involved professions in a model based in proactive, patient-centered assessment. This project has been funded by the Office of Academic Affiliations, Specialty Center of Excellence. We envision a framework for perioperative management that emphasizes three key principles of value-based care, including a focus on risk-stratification and prevention (Anticipate), communication and coordination (Collaborate) and quality improvement (Evaluate).
Geriatric Initiatives in Surgery (continued)

The ACE framework will inform not only implementation of the POSH Program, but the development of a fully integrated education program.

In an era of increased accountability, the POSH Program provides a model that will achieve high value care for the frailest geriatric patient, through a process that integrates education and expertise across disciplines.

CRIT (Chief Resident Immersion Training)

The Division of Geriatric Medicine, Department of Medicine, and Department of Surgery have been fortunate to have received funding for a Chief Resident Immersion Training (CRIT) program. The CRIT program fosters collaboration among disciplines in the management of medically complex older patients. Program participants include both Chief Residents and faculty responsible for residency training in surgical and medical specialties. The program brings these individuals together for an intensive two-day program focused on:

- Incorporating geriatrics principles into chief resident teaching and administrative roles
- Developing chief resident teaching and leadership skills with a focus on complex geriatric patients
- Enhancing leadership and teaching skills that are necessary for a successful term as chief resident
- Enhancing chief residents’ abilities to collaborate with other disciplines
- Developing an achievable action project focused on a geriatrics care issue that the chief resident will carry out during his/her chief residency year.

Selected publications


Immune Management Lab

Allan D. Kirk, M.D., Ph.D., F.A.C.S.
Professor and Chairman, Department of Surgery
Surgeon-in-Chief, Duke University Health System

When patients receive an organ transplant, they must take immunosuppressive medications for life to prevent rejection. These drugs are incompletely effective and cause significant morbidity. My research is directed toward understanding transplant rejection and translating this understanding into less morbid therapies for transplant recipients. Our group uses in vitro and animal models to develop transplant strategies and then investigates them in clinical trials. We also receive samples from patients in clinical trials to help understand what the next questions should be. We have successfully targeted several costimulatory molecules with monoclonal antibodies in primates and in humans, and are currently working to determine the best means of using these molecules to prevent kidney transplant rejection.

I am interested in the expression of CD154 on platelets and its implications for immune activation and thrombosis. I have initiated several clinical trials using monoclonal or polyclonal antibodies to achieve transient lymphocyte depletion, substantially reducing the need for immunosuppression in humans. Our group has shown that monocytes and memory T cells play a key role in post-depletional immune responses, and we are evaluating the signals influencing human monocyte and memory T cell function during depletion in humans.

We also have developed several novel means to more precisely monitor transplant recipients. Improved therapeutics and more precise monitoring techniques will facilitate tailor-made immune therapies and improve patient outcomes.

Selected publications


Immune Management Lab (continued)


Innate Immunity in Transplantation Lab

Todd V. Brennan, M.D., M.S.
Associate Professor of Surgery

Liwen Lin, Ph.D.
Postdoctoral Scholar

Feifei Feng, Ph.D.
Postdoctoral Scholar

Research in the Brennan Lab focuses on the role of the innate immune system in alloreactive T cell activation. The innate immune response is our first line of defense against microbial pathogens. Through a variety of pattern recognition receptors (PRRs), the innate immune system can recognize and respond to pathogen-associated molecular patterns (PAMPs) derived from bacteria, viruses, and fungi. It has recently been recognized that the innate immune system also responds to tissue injury through the recognition of damage-associated molecular patterns (DAMPS), often using the same PRRs. Intracellular signaling pathways downstream from these receptors lead to the production of inflammatory cytokines and co-stimulatory molecule upregulation that drives the adaptive immune response consisting of T and B cells.

We study the allo-response that occurs during graft-vs-host disease (GvHD), which occurs in the setting of allogeneic hematopoietic stem cell transplantation (allo-HSCT). During HSCT, as well as solid organ transplantation, a significant amount of tissue injury and cell death occurs, leading to the release of DAMPs. We are particularly interested in the role of DAMPS in allospecific T cell activation and study the effect on this T cell population using T cell receptor transgenic mice. We have previously studied heparan sulfate, a DAMP derived from the extracellular matrix, and how it contributes to GvHD following allo-HSCT. We are currently investigating the role of mitochondrial-derived DAMPS. Mitochondria originated from a symbiotic relationship between eukaryotic cells and bacteria. As such, mitochondria retain bacterial features such as unmethylated DNA and n-formyl peptide that are potent activators of the innate immune response. We hypothesize that mitochondria released from damaged tissue are a significant innate immune stimuli that promotes allospecific T cell activation.

On the flip side, innate immune stimulation can also be beneficial in the setting of anti-tumor responses produced by another subset of lymphocytes, natural killer (NK) cells. We have established luciferase-expressing lymphoma models in mice for the purpose of studying tumor eradication following innate immune activation of NK cells. We are currently examining the TLR9-dependent mechanism of a novel anti-tumor reagent that is in clinical trials for the treatment of advanced carcinoma.
Innate Immunity in Transplantation Lab (continued)

Selected publications


The Kenan Plastic Surgery Research Labs

Howard Levinson, M.D.
Associate Professor of Surgery
Associate Professor in Pathology
Associate Professor in Dermatology

Bruce Klitzman, Ph.D.
Associate Professor of Surgery
Associate Professor of Biomedical Engineering
Assistant Research Professor in Cell Biology

Wound Healing and Fibrosis Lab

Our team-based laboratory effort involves inter-disciplinary collaborations with biomedical engineers, textile engineers, mechanical engineers, chemists, microbiologists, pathologists, dermatologists, and industry. Our several projects include elucidating disease mechanisms as well as developing medical devices and diagnostic technologies. Sample projects include developing a novel hernia mesh with superior anchoring strength. Our novel mesh has been knitted by textile engineers at NCSU, and we are now testing the fabric in benchtop hernia models, as well as in a swine hernia model. We have met with the FDA and are in ongoing discussions with them to expedite a 510k approval pathway. We have additional industrial collaborators and are aiming to bring our product to market in the next few years.

In a second project, we are developing an anti-biofouling Foley catheter. This catheter utilizes a simple mechanical technology to prevent biofilm formation on the inside of Foley catheters. We are currently developing a commercial-grade catheter through engineering and design firms and are in the process of working with the FDA to gain 510k approval. In the coming year, we expect to complete a Phase I clinical trial at Duke.

A third project involves developing a novel tissue-engineered scaffold to prevent hypertrophic scarring. In this project, we have developed and filed a patent around a biodegradable scaffold that resists scar contraction. We have garnered proof-of-concept data in our validated murine hypertrophic scar contraction model. We are now further translating the technology into swine. We are also performing concomitant mechanistic studies that will inform future device design, since these scaffolds can be used to deliver therapeutics such as drugs or biologics.

In a fourth collaboration, we are working with Adam Wax, Ph.D., Theodore Kennedy Professor of Biomedical Engineering, to test and develop a noninvasive light imaging technology to more accurately quantify indeterminate burn depth. In this collaboration, we are applying Professor Wax’s technology to pre-clinical animal burn models and human subjects to improve analysis of skin architecture and perfusion at the mm scale. The technology has already demonstrated superiority to existing technologies.
The Kenan Plastic Surgery Research Labs (continued)

**Biomaterials and Microvascular Lab**

In our biosensor project, we are developing totally implantable sensors that have both nanoparticle and molecular sensors. After implantation into or below the skin, we use light to non-invasively read the sensors to detect the concentration of oxygen, hydrogen (pH), and other medically important small molecules. We already have some sensors that have functioned very well for over a year in the skin of animals. The sensors can be read using a variety of optical strategies, including absolute fluorescence, phosphorescence (“glow in the dark”) decay, and Raman spectroscopy. In this project, we collaborate with Dr. Tuan Vo-Dinh, director of the Fitzpatrick Institute for Photonics at Duke (biomedical engineering) and with Drs. Natalie Wisniewski (Dr. Klitzman’s former Ph.D. student) and Scott Nichols of PROFUSA, a company founded by Dr. Wisniewski. In a new direction to this project, our oxygen sensors are being used to continuously monitor the oxygen levels in the gastrointestinal tract of mice to see how oxygen influences the microbiome of the gut. It is only recently been appreciated how profoundly the gut microbiome can affect inflammation and other processes throughout the body, altering remote chronic diseases such as coronary artery disease and diabetes. This aspect project is in collaboration with the laboratory of Dr. Lawrence David.

A related second project focuses on improving conventional needle-type continuous glucose monitors for diabetics. Any material that is inserted into the body causes a foreign body reaction, such as a splinter or catheter. This response of tissues to the foreign object may differ in each tissue type. Our research focuses on developing modifications of clinically used glucose monitors to make them cause a less damaging response. We use new materials, coatings of existing materials, roughness and surface patterns of materials, and even pre-coating of materials with the body’s own less aggressive cells to reduce this foreign body response and allow for better monitoring. This project is a collaboration with Medtronic, one of the largest biomedical device companies in the world.

A third project focuses on novel glaucoma drainage devices. Medications are effective at lowering pressure in the eye of some patients, but in many a tube is needed to drain the excess fluid from within the eye. Two types of devices have been developed that rely on our expertise in biocompatibility of biomaterials. One device uses a conventional clinical drain that has been improved by coating with porous polymer. This device is now FDA approved and is being used in glaucoma patients. A separate type of drain provides a pathway for fluid to exit the eye directly to the tear film under the eyelid and not behind the eye, as with other drains. This device is being developed in collaboration with another former Duke biomedical engineering Ph.D. graduate, Dr. Lucinda Camras, and her company.

In a fourth project, we are collaborating with Dr. Jennifer West on developing implantable gels that can be injected as liquids and then be turned into soft solids by shining a light through the skin. Before injection, we can add various nanoparticles or sensing molecules to make injectable solid devices.

An area that is researched outside of the laboratory, but has widespread implications for society, is the safety of tattooing. Dr. Klitzman is a recognized expert in the safety of tattoo inks, having been a keynote speaker at the First International Conference on Tattoo Safety in Germany. His article recently published in *The Lancet* serves as a groundbreaking report of the worldwide state of the tattoo art form in societal health today.
Two unsolved problems in organ transplantation are: 1) injury caused by antibody directed at the donor organ and 2) recurrence of autoimmune disease after transplantation. Neither of these immunologic injuries is well addressed by current immunosuppressive therapy, and both prevent successful long-term allograft function. Our laboratory works in animal models to address these problems.

Strategies that we study are lymphocyte depletion and co-stimulation blockade, and we are focusing on strategies to address the B cell or plasma cell responsible for producing antibodies. We aim to safely lower the level of antibody in sensitized hosts to permit successful transplantation in the setting of prior immunization to donor MHC antigens.

Selected publications


Knechtle Lab (continued)


Laboratory for AIDS Research and Development

David Montefiori, Ph.D.
Professor of Surgery

Celia Crane LaBranche, Ph.D.
Assistant Professor of Surgery

The Laboratory for AIDS Vaccine Research and Development is led by David Montefiori, Ph.D. One of this lab’s highest priorities is to identify immunogens that generate broadly cross-reactive neutralizing antibodies against HIV-1 for inclusion in vaccines.

Many aspects of neutralizing antibodies are studied in this laboratory, including mechanisms of neutralization and escape, epitope diversity among the many different genetic subtypes and geographic distributions of the virus, broadly neutralizing epitopes, developmental pathways leading to broadly neutralizing antibody production, and computationally assisted vaccine design. Over the years, the laboratory has explored multiple technologies for measuring neutralizing antibodies and other potential antiviral antibodies, focusing on assay optimization, standardization, validation and high throughput.

For the past two decades, the laboratory has served as a national and international resource for standardized assessments of neutralizing antibody responses in preclinical and clinical trials of candidate AIDS vaccines.

Project highlights

- HIV Vaccine Trials Network (HVTN)
- The Center for HIV/AIDS Vaccine Immunology (CHAVI)
- The Primate Core Immunology/Virology Laboratories

The laboratory also receives funding from the Bill and Melinda Gates Foundation as part of the Collaboration for AIDS Vaccine Discovery (CAVD).
Laboratory for AIDS Research and Development (continued)

Select contributions

1. Defined the autologous and heterologous neutralizing antibody response to HIV-1 infection. These findings demonstrated that HIV-1 broadly neutralizing antibody responses are possible and provided a rationale for the discovery of a new generation of broadly neutralizing antibodies and their epitopes.

2. Developed highly standardized and formally validated assays to assess HIV-1 vaccine-elicited neutralizing antibody responses. These assays were used to define the magnitude and breadth of vaccine-elicited neutralizing antibody responses in preclinical and human clinical trials. The results highlight the limitations of current vaccine immunogens and emphasize the extraordinary challenge in designing an effective HIV-1 vaccine.

3. Developed robust panels of HIV-1 Env-pseudotyped viruses that have facilitated standardized assessments of vaccine-elicited neutralizing antibody responses.

Selected publications


Milano/Bowles Lab and the Duke Human Heart Repository (DHHR)

Carmelo A. Milano, M.D.
Professor of Surgery

Dawn E. Bowles, Ph.D.
Assistant Professor of Surgery

Dr. Milano serves as the surgical director for the Duke heart transplant and LVAD program. Dr. Bowles is a molecular biologist with expertise in adeno-associated viral vectors for gene therapy. The Milano/Bowles laboratory is focused on basic and translational research projects related to heart failure, mechanical circulatory support, and cardiac transplantation. In addition, Drs. Milano and Bowles co-direct the Duke Human Heart Repository (DHHR), one of the largest cardiac biorepositories in the world. The DHHR provides the Milano/Bowles research team, as well as collaborating researchers, access to human myocardial tissues, derivatives, bio-fluids, and associated clinical and demographic information needed to address a wide range of basic and translational research problems in human heart failure, heart disease, and treatment. Ongoing studies utilizing the DHHR resources include an investigation of biomarkers of cardiac disease states as well as exploring the basic biology of the cystic fibrosis transmembrane receptor in the context of normal and diseased myocardium.

Additional model systems and approaches utilized routinely in the Milano/Bowles laboratory include a model of porcine heart transplant, functional assessment of cardiac function ex vivo, canine coronary artery bypass, and novel cardiac specific viral vectors for gene therapy applications. Recent grants have focused on improved strategies for heart preservation during cardiac transplantation and novel forms of mechanical circulatory support. Other grants have funded projects related to cardiac gene therapy during cardiopulmonary bypass, understanding the impact of microgravity and low-level radiation on cardiac function, and understanding the genetics associated with the development of stroke during LVAD therapy.

Selected publications


Milano/Bowles Lab and the Duke Human Heart Repository (DHHR) (continued)


Ahmad T, Wang T, O’Brien E, Samsky MD, Pura J, Lokhnygina Y, Rogers JG, Hernandez AF, Craig D, Bowles D, Milano CA, Shah S, Januzzi JL, Felker GM, Patel CB. “Effects of left ventricular assist device support on biomarkers of cardiovascular stress, fibrosis, fluid homeostasis, inflammation, and renal injury.” Accepted JACC HF.


Research in the Onaitis Lab is focused on the basic mechanisms underlying lung tumorigenesis, particularly lung adenocarcinoma and lung squamous cell carcinoma. We study the initiation and maintenance of lung tumors, using both genetic mouse models and human lung tumor cultures (primary and established cell lines).

Recently, we have used a mouse genetic approach to demonstrate that activated K-Ras mouse lung adenocarcinomas originate from Type II cells in the alveoli and that no tumors form in bronchial and bronchiolar cells. Using unique cell lineage specific inducible mouse models in which genes may be activated or knocked out in Cc10+ or Sftpc+ specific respiratory epithelial subsets, we found that Notch activation is specific to Type II cells when K-Ras is activated. Importantly, inhibition of the Notch transcription complex is tumor suppressive in alveolar cells when K-Ras is activated. Finally, genetic and chromatin immunoprecipitation experiments demonstrate that the developmental gene Sox2 suppresses Notch at the promoter level. Sox2 is present in airway cells and absent in alveolar cells; this explains why K-Ras-induced adenocarcinomas occur in alveolar cells.

We have also analyzed the classical subtype of lung squamous carcinoma and discovered that the HEDGEHOG-GLI pathway is upregulated and that GLI inhibition is a viable therapeutic strategy. In addition, the lineage-specific transcription factor SOX2 is elevated in the classical subset. Using our published Sox2 over expression mouse model and human lung squamous culture, we will identify other factors as a potential therapeutic target downstream of Sox2 and to develop targeted inhibition of these pathways to treat these patients.

Our long-range goal is to analyze these oncogene-cell of origin interactions in the mouse and human respiratory epithelia to better understand the heterogeneity of human lung cancer and to identify potential therapeutic opportunities.

Selected publications


Sullenger Research Lab

Bruce A. Sullenger, Ph.D.
Joseph W. and Dorothy W. Beard Professor
Professor of Surgery
Professor of Pharmacology and Cancer Biology

Dr. Sullenger has performed biochemical and translational research to develop nucleic acid-based therapeutics for more than two decades. During this time, the idea of employing nucleic acids as therapeutic agents has grown from little more than a concept to a clinical reality. Dr. Sullenger was one of the early pioneers in the field of nucleic acid therapeutics and continues to be recognized as a leader and innovator in this growing area of research. Since 1990, he has authored numerous papers in this field, fourteen of which have appeared in five of the most prestigious biomedical journals, Science, Nature, Nature Medicine, Nature Biotechnology, and Cell.

The Sullenger laboratory has worked extensively in the fields of oncology, inflammation, and thrombosis. They were the first to demonstrate that RNA aptamers can be made to selectively target cell surface receptors on cancer cells and deliver therapeutic cargoes to such cells (Nature Biotechnology, 2006; Nature Chemical Biology, 2010; Nucleic Acid Ther, 2012). Moreover, they were the first to demonstrate that aptamers can serve as rapid onset and rapidly reversible antithrombotic agents, work that has been successfully translated into several clinical studies (Nature, 2002; Nature Biotechnology, 2004, Nature Medicine, 2009; Molecular Therapy, 2011; Chemistry & Biology, 2014).

In addition, the Sullenger group was the first to demonstrate that nucleic acid scavengers can limit activation of nucleic acid-sensing TLRs and limit inflammation in a variety of autoimmune and inflammatory settings (PNAS, 2011; PNAS, 2012; Plast Reconstr Surg, 2014). Currently, the Sullenger laboratory is actively exploring therapeutic applications for these inventions.

Selected publications


Sullenger Research Lab (continued)


Surgical Outcomes and Quality Laboratory

John Migaly, M.D.
Associate Professor of Surgery
Director, General Surgery Residency

Julie Thacker, M.D.
Assistant Professor of Surgery
Medical Director, Enhanced Recovery Program

Chris Mantyh, M.D.
Professor of Surgery
Chief, Gastrointestinal and Colorectal Surgery

Erich Huang, M.D., Ph.D.
Assistant Professor in Biostatistics and Bioinformatics
Assistant Professor in Surgery

Katherine Heller, Ph.D.
Assistant Professor in Biostatistics and Bioinformatics

Surgical Outcomes and Quality Laboratory is a diverse group of researchers from the departments of Surgery, Bioinformatics, and Statistics that investigates surgical outcomes using large internal and national databases. Collectively, we have analyzed our own data on surgical complications such as wound infections and have designed a highly effective bundle to reduce these complications.

We have also analyzed large oncology databases to examine new techniques such as robotic and laparoscopic surgery on important oncologic outcomes. Recently, this group has created a platform for predicting individualized surgical outcomes and integrating personalized interventions into postoperative care.

Examples of specific projects include:

- Enhanced recovery after surgery (ERAS)
- Effect of surgical sub-specialization on colon cancer survival
- Laparoscopic vs. open approach on re-operation rate after colectomy
- The benefit of ERAS and surgical bundles in colorectal surgery
- Outcomes of laparoscopic vs. open surgery for rectal cancer
- The benefit of alvimopan in colorectal surgery in an enhanced recovery program
- Improvement in survival of T1 node positive cancers with adjuvant therapy
- Mechanical bowel prep and oral antibiotics in colorectal surgery
- Determining the optimal timing of adjuvant therapy for colorectal cancers
Surgical Outcomes and Quality Laboratory (continued)

Members of the laboratory include:

Residents
Zheifi Sun  Mohamed Adam
Jina Kim  Daniel Nussbaum
Hamza Aziz  Megan Turner
Brian Ezekian  Brian Gilmore

Selected publications


Valve Surgery Research

Peter K. Smith, M.D.
Professor of Surgery
Division Chief, Cardiovascular and Thoracic Surgery

Donald D. Glower, M.D.
Professor of Surgery

The Duke Valve Surgery Database informs outcomes research with data from more than 13,000 patients collected prospectively for 25 years. Duke has among the world’s largest amount of published research in mitral or aortic operations via minithoracotomy.

Research projects

REALISM
Dr. Glower is a principal investigator of REALISM, a trial investigating percutaneous mitral repair using the Abbott MitraClip. Underway at Duke since 2006, the study has evolved from a randomized surgical-comparison trial to a continued-access registry. Duke is one of only 40 North American sites with access to MitraClip.

Mitral valve-coronary artery bypass grafting research
Dr. Smith is a principal investigator on a trial comparing the effectiveness of a mitral valve procedure in combination with coronary artery bypass grafting (CABG) versus CABG alone in people with moderate ischemic mitral regurgitation.

Percutaneous pulmonary valve replacement research
Duke is at the forefront of innovations in percutaneous pulmonary valve replacement.

- Duke is one of only three U.S. centers participating in the COMPASSION trial—implanting the Edwards SAPIEN valve in the pulmonary valve position—for which Phase II enrollment will soon begin.
- Duke is also among the few centers implanting the Medtronic Melody transcatheter pulmonary valve, an FDA-approved Humanitarian Use Device.
- Duke is currently the nation’s only center with access to both of those valves.
- Duke will soon enroll patients in a pioneering transcatheter valve trial that will potentially provide a percutaneous option for high-risk patients with aortic stenosis.
Valve Surgery Research (continued)

Selected publications


Vascular Surgery Research Laboratory

Jeffrey H. Lawson, M.D., Ph.D.
Professor of Surgery and Pathology
Vice Chair of Research

Roberto J. Manson, M.D.
Assistant Professor of Surgery

James Otto, Ph.D.
Senior Scientist and Laboratory Manager

The Vascular Surgery Research Laboratory studies a wide array of basic, translational, and clinical problems associated with cardiovascular surgery. One of the major interests of our laboratory involves studying the biology, function, and failure of vascular conduit used for vascular reconstruction and vascular access creation for hemodialysis. This includes the development, preclinical testing, and clinical trials of novel tissue engineered blood vessels. We also examine the biology and remodeling of vein tissue used to construct arteriovenous vascular access and vascular bypass grafts once veins are exposed to the arterial environment. This includes the biology of the naïve vein and associated clinical comorbidities that influence vein maturation and stenosis. We are actively pursuing potential interventions to improve outcomes associated with vascular reconstruction in both animal models and human subjects.
A second major area of research interest in the laboratory involves studying the dysregulation of hemostasis and blood coagulation that occur when patients experience major surgical procedures, trauma, or have their circulating blood in contact with foreign surfaces such as cardiopulmonary bypass or ECMO circuits. These surgical challenges to the host hemostatic system can induce acquired coagulopathies that lead to either thrombotic or hemorrhage events. Through systematic blood and tissue collections protocols in both animals and humans, we are systematically identifying cellular and proteomic changes that alter normal inflammatory, coagulation, and fibrinolytic pathways following surgical challenge. We are actively interested in discovering mechanisms of induced coagulopathies that impact and improve surgical outcomes.

Selected publications


Vascularized Composite Allograft Laboratory

Linda Cendales, M.D.
Associate Professor of Surgery

Vascularized composite allotransplantation (VCA) refers to the transplantation of multiple tissues, such as skin, muscle, tendon, nerve, and bone, as a functional unit (e.g., a hand). Several recent advances in clinical organ transplant immunosuppression and experimental VCA have now made it feasible to consider clinical VCA for functional restoration in patients with the loss of one or both hands or large tissue defects that may not be reconstructed with autologous tissue. My research facilitates the translation of VCA from the bench to the bedside.

Our group has established preclinical models to understand VCA rejection in different tissues and to use that insight to minimize immunosuppression in VCA recipients who participate in clinical trials. We also organized the first public international consensus discussions conference in VCA at the Ninth Banff Conference on Allograft Pathology in Spain in 2007, resulting in the Banff VCA 2007 classification for skin allograft pathology. Additionally, we established a VCA Consortium to enable the comprehensive analysis of samples from patients in VCA clinical trials around the country.

Based on our studies of different immunosuppressive regimens in primates, we have been the first to show that belatacept prevents rejection in VCA in primates and controls rejection in humans. We are currently investigating this approach in a clinical trial of hand transplant recipients (NCT02310867). This clinical trial aims to determine the safety and efficacy of hand transplantation as a treatment for patients with limb loss. This study will also test the efficacy of belatacept to prevent rejection of the transplanted hand.

Selected publications


Vascularized Composite Allograft Laboratory (continued)


Weinhold Research Lab

Kent J. Weinhold, Ph.D.
Joseph W. and Dorothy W. Beard Professor of Surgery
Professor of Immunology
Professor of Pathology
Director, Duke Immune Profiling Core (DIPC)

The Weinhold Laboratory is focused on utilizing a comprehensive repertoire of highly standardized and formerly validated assay platforms to profile the human immune system in order to identify immunologic signatures that predict disease outcomes. These ongoing studies span a broad range of highly relevant clinical arenas, including: 1) cancer (non-small cell lung cancer, head and neck cancer, glioblastoma neoformed, ovarian cancer, and prostate cancer), 2) autoimmune diseases (rheumatoid arthritis, systemic lupus erythematosis, multiple sclerosis, and myasthenia gravis), 3) pulmonary disease (idiopathic pulmonary fibrosis), 4) solid organ transplantation (lung, kidney, liver, and heart), and 5) rare diseases (Pompe disease).

Two of the areas that have been especially active over the past year include the comprehensive immunologic profiling of cancer patients receiving so-called “immune checkpoint blockade” therapies and the search for immune signatures in lung transplant recipients that track with resistance to CMV infection. The laboratory is conducting immune monitoring studies associated with a Phase I trial of Ipilimumab (anti-CTLA-4) in a neoadjuvant setting for the treatment of non-small cell lung cancer (NSCLC). For this trial we are extensively utilized several polychromatic flow cytometry (PFC) platforms to follow activation, maturation, exhaustion, and proliferation patterns within CD4+ and CD8+ subsets of T-cells. We are also utilizing an intracellular cytokine staining (ICS) platform in efforts to detect anti-tumor associated antigen (TAA) responses by CD4+ and CD8+ T cells from peripheral blood mononuclear cells as well as lymphocytes infiltrating the patients’ tumor. These assays are designed to measure antigen-driven intracellular production of IFN-γ, TNF-α, and IL-2, as well as the degranulation marker CD107. This strategy enables us to not only document individual cytokine responses, but to also assess (through Boolean gating) changes in relative polyfunctional-ity of the responses. We are performing similar immune monitoring of a Phase II trial evaluating nivolumab (anti-PD-1) alone vs. combined nivolumab + ipilimumab vs. avastin (bevacizumab) alone in patients with glioblastomas. In both studies, we are seeking to identify pharmacodynamics markers and immune correlates predictive of clinical responses.

In recently completed studies in a cohort of lung transplant recipients, we identified specific polyfunctional signatures in CD4+ and CD8+ subsets against CMV pp65 and IE-1 antigens that tracked with resistance to CMV infection (manuscript in preparation). These findings now serve as the basis for a Phase I clinical trial to compare conventional six-month chemoprophylaxis in lung transplant recipients versus a regimen dictated by the presence or absence of the predictive signatures. This trial is the principal component of a recently awarded Clinical Trials in Organ Transplantation (CTOT) award made from the NIH to Duke (Scott Palmer, PI). Ongoing studies will test the hypothesis that these signatures that have been validated in lung transplant recipients will also predict resistance to CMV infection in the context of other solid organ transplants such as kidney, liver, and heart.
Weinhold Research Lab (continued)

Future studies will also attempt to identify predictive signatures for resistance to BK polyomavirus, the cause of graft-threatening nephritis in kidney transplant recipients and cystitis in bone marrow transplant recipients. Other human diseases that are presently being subjected to comprehensive immune profiling by the laboratory include idiopathic pulmonary fibrosis (IPF), myasthenia gravis, multiple sclerosis, systemic lupus erythematosus, acute coronary syndrome, and Pompe disease.

Selected publications


Faculty

Duke Surgery faculty members are both expert practitioners and valuable mentors. They have been trained at some of the most prestigious institutions in the country, and many are regarded internationally as experts in their field. Every year, they perform more than 30,000 procedures, publish hundreds of articles in peer-reviewed journals, and treat some of the rarest and most challenging medical conditions.

At the same time, they are committed to providing comprehensive training and education to medical students, residents, and fellows. Faculty members show a high level of responsibility for trainees’ futures, taking the time to develop relationships that support a collaborative learning environment. Residents are encouraged to begin mentorship relationships with faculty in the first year of their training and to develop these into lasting collaborative associations. This direct access to experts allows residents to gain direct knowledge that cannot be found through classroom instruction.

In addition to being the academic home for faculty in the traditional general surgical specialties, the department houses faculty in cardiovascular and thoracic surgery, otolaryngology, plastic surgery, urologic surgery, and vascular surgery, as well as basic science faculty within the Division of Surgical Sciences. This enhances the breadth of experience afforded the general surgery resident. Members of the general surgery, cardiovascular and thoracic, emergency medicine, and surgical sciences faculty are listed below, as rotations on these specialties are most prevalent for the general surgery resident.
Duke General Surgery

Duke General Surgery comprises the divisions of oncology, vascular, transplant, bariatric, plastics, advanced GI, and pediatric surgery. Duke’s highly trained faculty members come from diverse educational backgrounds, with Ph.D. concentrations ranging from immunology to biomedical engineering. Research interests include laparoscopic techniques, breast surgical oncology, and fetal therapy.

Allan Kirk, M.D., Ph.D.
Professor of Surgery

**Title:**
Chairman, Department of Surgery; Surgeon-in-Chief

**Training:**
M.D., Duke University School of Medicine, 1987

**Residency:**
Surgery, Duke University, 1995

**Fellowship:**
Multi-organ Transplantation Fellowship, University of Wisconsin, 1997

**Other Training:**
Ph.D., Immunology, Duke University, 1992

**Research Interests:**
Dr. Kirk’s primary research interests lie in the development and implementation of novel immunomodulatory strategies for transplantation and other surgically relevant conditions. He is principal investigator on numerous projects funded by the NIH, FDA, and Department of Defense.

John Migaly, M.D.
Associate Professor of Surgery

**Title:**
Program Director, General Surgery Residency Training Program

**Training:**
M.D., New York University School of Medicine, 1996

**Residency:**
General Surgery, Temple University Health Sciences Center, 1997–2004

**Fellowship:**
Colon and Rectal Surgery, Cleveland Clinic Foundation, Florida, 2005

**Clinical Interests:**
Surgical treatment of colon and rectal cancer, Crohn’s disease, ulcerative colitis, diverticulitis, and benign anorectal diseases; laparoscopic colon and rectal surgery; sphincter-saving procedures; ileal-pouch procedures.
Obinna Adibe, M.D.
Assistant Professor of Surgery
Assistant Professor in Pediatrics

Training:
M.D., University of Medicine and Dentistry of New Jersey - New Jersey Medical School, 2001

Residency:
General Surgery, University of Connecticut School of Medicine, 2001–2004, 2006–2008

Fellowship:
Pediatric Endosurgery, Children’s Hospital of Alabama, 2008–2009

Clinical Interests:
Advanced pediatric minimally invasive surgery, neonatal surgery, anorectal malformations, inflammatory bowel disease, prenatal counseling, fetal therapy, pediatric outcomes research disease, prenatal counseling.

Alexander C. Allori, M.D., M.P.H.
Assistant Professor of Surgery

Training:
M.D., University of Texas Medical School at Houston, 2003
M.P.H., University of Texas School of Public Health, 1999

Residency:
General Surgery, Beth Israel Medical Center, New York, 2003–2010
Plastic Surgery, Duke University Medical Center, 2010–2013

Fellowship:

Research Interests:
Dr. Allori’s research interests cover the gamut of health-services research and include traditional clinical outcomes research, patient-reported outcomes, comparative effectiveness review, economic analysis, health-technology assessment, and management and policy studies. He has a particular interest in informatics, data analytics and visualization, and dissemination and implementation. His goal is to develop “metrics that matter”—standardized methods to assess outcomes that are meaningful to patients. He focuses especially on improving integration of these data into the clinical workflow of multidisciplinary teams, where communication and coordination of care are critical for success.
Dan G. “Trey” Blazer III, M.D.
Associate Professor of Surgery

**Training:**
M.D., Duke University School of Medicine, 1999

**Residency:**
General Surgery, University of Michigan, 1999–2006

**Fellowship:**
Surgical Oncology, University of Texas, MD Anderson Cancer Center, 2006–2008
Surgical Oncology, National Cancer Institute, Maryland, 2002–2004

**Clinical Interests:**
Diagnosis and surgical management of solid tumors, including colorectal, hepatobiliary, and pancreatic malignancies; soft tissue sarcomas; regional perfusion strategies including hyperthermic intraperitoneal chemotherapy (HIPEC).

**Research Interests:**
Biology and therapeutic approaches toward sarcomas.

Todd Brennan, M.D., M.S.
Associate Professor of Surgery

**Training:**
M.D., Harvard Medical School, Massachusetts, 1999

**Residency:**
General Surgery, UCSF Medical Center, California, 1999–2007

**Fellowship:**
Abdominal Transplantation, UCSF Medical Center, California, 2007–2009

**Clinical Interests:**
General, laparoscopic, and hepatobiliary surgery; liver-, kidney-, and pancreas-transplant surgery

**Research Interests:**
Dr. Brennan studies the regulation of T-cell subsets by innate immune signals. The goal of his laboratory is to understand the contribution of innate pathway stimulation on the allospecific T-cell response during organ transplantation. Through these studies, they aim to gain new insights into the molecular basis of alloimmunity and immune tolerance in order to reveal novel targets for the prevention and treatment of transplant rejection.
Kelli Brooks, M.D.
Assistant Professor of Surgery

Title:
Physician Assistant Residency Program Director

Training:
M.D., Duke University School of Medicine, 1999

Residency:
General Surgery, Duke University Medical Center, 2006

Fellowship:
Surgical Critical Care, Duke University Medical Center, 2007

Clinical Interests:
Trauma surgery, care of the multisystem trauma patient, surgical critical care, gastrointestinal and general surgery.

Linda Carime Cendales, M.D.
Associate Professor of Surgery

Training:
M.D., Universidad Autonoma Metropolitana-Xochimilco, Mexico, 1992
Research Fellow, Instituto Nacional de la Nutricion “Dr. Salvador Zubiran”, Mexico, 1992

Residency:
Surgery, Hospital General “Dr. Manuel Gea Gonzalez”, Mexico, 1996

Fellowship:
Hand and Microsurgery, Christine M. Kleinert Institute for Hand and Microsurgery, Kentucky, 1997–2001
Transplant Surgery and Research, National Institutes of Health, NIDDK, Maryland, 2004
Senior Clinical Fellow, National Institutes of Health, NIAMS, Maryland, 2006
Translational Research, Emory Laney Graduate School, Georgia, 2011
Alison S. Clay, M.D.
Assistant Professor of Surgery; Assistant Professor in Medicine

Training:
M.D., University of Chicago Pritzker School of Medicine, Illinois, 1998

Residency:
Internal Medicine, Indiana University School of Medicine, 1998–2002

Fellowship:
Pulmonary and Critical Care Medicine, Duke University Medical Center, 2002–2005

Clinical Interests:
Research and academic interests involve the intersection of patient safety, resident education, and ICU quality.

Bradley Collins, M.D.
Associate Professor of Surgery

Training:
M.D., Duke University School of Medicine, 1989

Residency:
General Surgery, Duke University Medical Center, 1989–1997

Fellowship:
Transplant Surgery, University of Wisconsin at Madison, 1997–1999

Clinical Interests:
Liver, pancreas, and kidney transplantation; general surgery in transplant patients, dialysis access surgery.

Research Interests:
The laboratory's primary focus is the study of the feasibility of transplanting porcine islets into primates as a treatment for type 1 diabetes mellitus. In collaboration with Dr. Emmanuel Opara, an islet cell physiologist, they have purified islets from porcine pancreases, placed the islets in microcapsules, and transplanted the islets into diabetic baboons without the use of immunosuppression. Their goal is to demonstrate the utility of this system as a pre-clinical model. The laboratory is also collaborating with hepatologist Dr. Don Rockey to study senescence of the liver.
Mitchell Cox, M.D.
Associate Professor of Surgery

Title:
Associate Program Director, Vascular Surgery Fellowship

Training:
M.D., Case Western Reserve University, 1996

Residency:
General Surgery, Wright State University, Ohio, 2001

Fellowship:
Vascular Surgery, Baylor College of Medicine, Texas, 2004

Clinical Interests:
Minimally invasive and surgical treatment of all aspects of peripheral arterial and venous disease, including aortic aneurysm, carotid stenosis, and lower-extremity occlusive disease; arteriovenous access for hemodialysis; IVC filter complications; central vein occlusion.

Detlev Erdmann, M.D., Ph.D., M.H.Sc.
Associate Professor of Surgery
Professor of Plastic Surgery, University of Heidelberg, Germany

Training:
M.D., University of Munich (Germany), 1990
Ph.D., Plastic Surgery-Physiology, University of Heidelberg (Germany), 2004
M.H.Sc., Duke University, 2007

Residency:
General Surgery, University of Heidelberg (Germany), 1998

Fellowship:
Plastic Surgery, University of Heidelberg (Germany), 2000
Scholar, Plastic and Reconstructive Surgery, Duke University, 2001
Hand Surgery, University of Heidelberg (Germany), 2003

Clinical Interests:
Reconstructive plastic surgery (such as after trauma or tumor surgery), including microsurgery and free-tissue transfer (“free flaps”) to the extremities, head and neck, and other areas; chest-wall reconstruction, including sternum non-union; abdominal-wall reconstruction, including complex abdominal hernia repair; all aspects of surgery after weight loss and post-bariatric surgery, such as panniculectomy and abdominoplasty (“tummy tuck”), body lift, arm lift (brachioplasty), thigh lift, breast lift, reduction, and augmentation; surgery for gynecomastia and “buried penis”; craniomaxillofacial, hand trauma.

Research Interests:
Clinical outcome studies; translational research; basic sciences including tissue engineering; composite tissue allograft transplantation.
Gregory S. Georgiade, M.D.
Professor of Surgery

**Title:**
Chief, Division of Plastic Surgery
Vice Chair, Department of Surgery

**Training:**
M.D., Duke University School of Medicine, 1973

**Residency:**
General Surgery, Duke University Medical Center, 1973–1978

**Fellowship:**
Plastic Surgery, Duke University Medical Center, 1978–1980

**Clinical Interests:**
Premalignant and malignant disease of the breast, aesthetic and reconstructive breast surgery, liposuction, abdominoplasty, breast implants and related problems, general reconstructive plastic surgery, reconstructive cleft lip and palate surgery, multisystem trauma.

Rachel A. Greenup, M.D., M.P.H.
Assistant Professor of Surgery

**Training:**
M.D., Medical College of Wisconsin, 2004

**Residency:**
General Surgery, Medical College of Wisconsin and Affiliated Hospitals, 2004–2011

**Fellowship:**
Breast Surgical Oncology, Massachusetts General Hospital, Dana-Farber Cancer Institute and Brigham and Women’s Hospital, 2011–2012

**Other Training:**
M.P.H., University of Wisconsin-Madison School of Medicine and Public Health, 2010

**Clinical Interests:**
Scott T. Hollenbeck, M.D.
Associate Professor of Surgery

Training:
M.D., Ohio State University College of Medicine, 2000
Residency:
General Surgery, New York-Presbyterian Hospital/Cornell, 2000–2007
Plastic and Reconstructive Surgery, Duke University Medical Center, 2007–2010

Clinical Interests:
Reconstructive surgery, including microsurgery and breast, extremity, and abdominal-wall reconstruction; vascular anomalies; fat grafting, cosmetic surgery; breast implant and lift surgery; body contouring; abdominoplasty

Research Interests:
Breast cancer, adipose biology, lower extremity reconstruction.

M. Benjamin Hopkins, M.D.
Assistant Professor of Surgery

Training:
M.D., Wake Forest University School of Medicine, 2004
Residency:
General Surgery, Ochsner Clinic Foundation, Louisiana, 2009
Fellowship:
Colon and Rectal Surgery, Ochsner Clinic Foundation, Louisiana, 2010

Clinical Interests:
Colorectal surgery, laparoscopic colorectal surgery, surgery for inflammatory bowel disease, endorectal ultrasound, benign anorectal disease, sphincter-saving procedures, ileal-pouch procedures, rectal prolapse repair, fecal incontinence, diverticulitis, presacral tumors, anal cancer.
Shelley Hwang, M.D., M.P.H.
Professor of Surgery

Title:
Program Director, Breast Surgical Fellowship

Training:
M.D., University of California-Los Angeles David Geffen School of Medicine, 1991

Residency:
General Surgery, Cornell University New York Hospital, 1992–1996

Fellowship:
Breast Surgery, Memorial Sloan-Kettering Cancer Center, New York, 1996–1997
Surgical Oncology, Singapore General Hospital, 1997–1998

Clinical Interests:
Diagnosis and treatment of early-stage breast cancer, management of patients at high risk for breast cancer, surgical treatment of patients with breast disease.

Research Interests:
Biology of early stage breast cancer and evolution of metastatic disease.

Bruce Klitzman, Ph.D.
Associate Professor of Surgery
Associate Professor of Biomedical Engineering
Assistant Research Professor in Cell Biology

Training:
Ph.D., University of Virginia, 1979

Research Interests:
Dr. Klitzman's overriding interests are in the fields of tissue engineering, wound healing, biosensors, and long-term improvement of medical device implantation. His basic research interests are in the area of physiological mechanisms of optimizing substrate transport to tissue. This broad topic covers studies on a whole animal, whole organ, hemorheological, microvascular, cellular, ultrastructural, and molecular level.
Stuart J. Knechtle, M.D.
Professor of Surgery

**Title:**
Executive Director, Duke Transplant Center

**Training:**
M.D., Weill Cornell Medical College, 1982

**Residency:**
Surgery, Duke University, 1989

**Fellowship:**
Multi-organ transplantation, University of Wisconsin, 1991

**Research Interests:**
Dr. Knechtle's research interests lie in the development and implementation of novel strategies for preventing organ transplant rejection, preventing antibody-mediated injury, and preventing recurrence of autoimmune disease. His lab has been continually funded by the NIH for 24 years.

Jean Kwun, Ph.D.
Assistant Professor of Surgery

**Training:**
Ph.D., University of Wisconsin at Madison, 2007

**Research Interests:**
Humoral tolerance to organ transplants in animal model and humans, developing a clinically relevant animal model to study the mechanisms of antibody-mediated rejection (AMR), and establishing a conceptual basis that will translate into therapeutic intervention of AMR.
Sandhya Lagoo-Deenadayalan, M.D., Ph.D.
Associate Professor of Surgery

Training:
M.D., B.J. Medical College, University of Poona, India, 1981

Residency:
General Surgery, University of Mississippi Medical Center, 1995–2000

Fellowship:
Endosurgery, Duke University Medical Center, 2000–2002

Other Degrees:
Ph.D., Immunology, MD Anderson Cancer, Texas, 1990

Clinical Interests:
Gastrointestinal surgery (open and laparoscopic), including inguinal and ventral hernia repair; cholecystectomy; splenectomy; anti-reflux procedures; Heller myotomy for achalasia.

Research Interest:
Surgical geriatrics, global health.

Jeffrey Lawson, M.D., Ph.D.
Professor of Surgery
Professor in Pathology

Title:
Program Director, General Surgery Surgical Fellowship

Training:
M.D., University of Vermont, 1991

Residency:
General and Thoracic Surgery, Duke University Medical Center, 1992–1999

Fellowship:
Vascular Surgery, Duke University Medical Center, 2001–2002

Other Degrees:
Ph.D., Cell and Molecular Biology, University of Vermont, 1992

Clinical Interests:
Vascular surgery, hemodialysis access, peripheral arterial disease, aortic disease, carotid artery disease, endovascular surgery, surgical disorders of vascular thrombosis, blood coagulation.

Research Interests:
The research interests of Dr. Lawson’s laboratory include the study of vascular biology and cellular differentiation of vascular tissue, the proteolytic and cell-mediated regulation of blood coagulation, inflammatory mediated thrombosis, and the development of bioengineered blood vessels. The clinical interests of his laboratory include the study of novel therapies for vascular and cardiovascular surgery, thrombosis related to surgical procedures, clinical inhibitors of blood coagulation proteases, and the study of the immune response to biologics used in surgery.
Laura Lazarus, M.D.
Assistant Professor of Surgery

Training:
M.D., Hahnemann School of Medicine (Pennsylvania), 1996
Residency:
General Surgery, Louisiana State University School of Medicine, 1996–2001
Fellowship:
Breast Surgery, Northwestern University Feinberg School of Medicine (Illinois), 2001–2002

Clinical Interests:
Diagnosis and treatment of breast cancer, management of patients at high risk for breast cancer, surgical treatment of patients with breast disease.

Howard Levinson, M.D.
Associate Professor of Surgery
Associate Professor in Dermatology
Assistant Professor in Pathology

Training:
M.D., University of Texas Medical Branch School of Medicine, 1997
Residency:
Fellowship:
Wound Healing (Research), New York University, 1998–1999
Wound Healing (Research), Milton S. Hershey Medical Center (Pennsylvania), 2000–2002
Plastic and Reconstructive Surgery, Duke University Medical Center, 2005–2008

Clinical Interests:
Breast surgery, including reconstruction, reduction, lifts, augmentation, and gynecomastia; reconstruction, including microsurgery and soft-tissue reconstruction, flaps and grafts; orthopaedic trauma and oncology; skin cancer; extremity reconstruction; complex hernia repair; hand and facial trauma; management of problem scarring and keloids; cosmetic surgery, including facial rejuvenation and fillers; face, forehead, brow, and arm lifts; liposuction; BOTOX; eyelid surgery; abdominoplasty; implants.

Research Interests:
Fibrosis, wound healing, cell contractility, tissue remodeling.
Roberto Jose Manson, M.D.
Assistant Professor of Surgery

Training:
M.D., National University of Tucuman, Argentina, 1996

Residency:
General Surgery, Hospital Italiano de Buenos Aires, 2002

Fellowship:
MIS Research Fellowship, Duke University, 2005
Vascular Research Fellowship, Duke University, 2008

Clinical Interests:
Vascular access

Research Interests:
Vascular access, surgical device preclinical trials, surgical training skills.

Christopher Mantyh, M.D.
Professor of Surgery

Title:
Chief, Gastrointestinal (GI) and Colorectal Surgery

Training:
M.D., University of Wisconsin Medical School, 1991

Residency:

Fellowship:
Colorectal Surgery, Cleveland Clinic Foundation, Ohio, 1998–1999

Clinical Interests:
Colorectal surgery; surgery for inflammatory bowel disease; benign anal/rectal surgery; sphincter-saving procedures for rectal cancer; fecal incontinence surgery; rectal prolapse repair; familial polyposis surgery; laparoscopic colon surgery; treatment of diverticulitis, anal cancer, Crohn's disease, ulcerative colitis, ileus, motility, and neurogenic inflammation.

Research Interests:
Neurogenic inflammation, ulcerative colitis, Crohn's disease, neuropeptides, receptors, vanilloid receptor, substance P, intestinal motility, colorectal cancer outcomes, colon cancer, rectal cancer.
Jeffrey R. Marcus, M.D.
Associate Professor of Surgery
Associate Professor in Pediatrics
Associate Vice-Chair, Surgery

Training:
M.D., University of Michigan Medical School, 1994

Residency:
Plastic and General Surgery, Northwestern University Medical Center, Illinois, 1994–2001

Fellowship:
Pediatric Plastic Surgery, University of Toronto Hospital for Sick Children, Canada, 2001–2002
Craniofacial Surgery, University of Toronto Hospital for Sick Children, Canada, 2002–2003

Clinical Interests:
Craniofacial surgery for children and adults including cleft lip/palate and craniosynostosis; rhinoplasty for cosmetic and/or breathing issues; microsurgical facial reanimation for facial paralysis; microsurgical repair of brachial plexus injuries in infants; broad scope of pediatric plastic surgery including skin conditions, congenital hand surgery, ear reconstruction; assistance to families of internationally adopted children with cleft lip and palate.

Research Interests:
Dr. Marcus’ research parallels the specialized clinical programs at Duke. He is involved in clinical research looking comprehensively at outcomes of cleft care to develop standards for evaluating a team’s overall success. Based on a recent grant from the Centers for Disease Control (CDC), he and his team are also participating with several centers to look specifically at academic, psychosocial, and surgical outcomes for all children with clefts born in North Carolina. They are committed to the technique of nasoalveolar molding for children with clefts and are engaged in analyzing its benefits. In rhinoplasty, they have developed a model for nasal respiratory physiology, and they are looking at the effects of specific surgical procedures on nasal airflow and resistance. The craniofacial imaging lab has developed sophisticated software to analyze cranial shape, and they use these techniques to define abnormal conditions and their treatment relative to normal. Lastly, the craniomaxillofacial trauma team continues to look at factors associated with facial trauma in North Carolina in order to implement techniques and processes to deliver optimal care and results.
Richard McCann, M.D.
Professor of Surgery

Title:
Assistant Chief of Surgery, Veterans Administration Medical Center

Training:
M.D., Cornell University Medical College, 1974

Residency:
Surgery and Vascular Surgery, Duke University Medical Center, 1974–1983

Clinical Interests:
Endovascular and open surgery for abdominal and thoracic aortic aneurysms; endovascular and open surgery for peripheral vascular disease; carotid artery disease; lower-extremity vascular obstruction.

Research Interests:
Current research interests involve the application of endovascular technology to the treatment of peripheral vascular diseases. These activities include the use of commercially available and experimental designs of stent grafts for abdominal aortic aneurysm and the use of angioplasty and stenting for the management of difficult carotid artery disease.

Suhail K. Mithani, M.D.
Assistant Professor of Surgery
Assistant Professor of Orthopaedic Surgery

Training:
M.D., Vanderbilt University School of Medicine, Tennessee, 2003

Residency:
Plastic Surgery, Johns Hopkins Hospital, Maryland, 2003–2011

Fellowship:
Hand Surgery, Duke University Medical Center, 2011–2012

Clinical Interests:
Hand and upper extremity surgery, reconstructive surgery and microsurgical management of lymphedema.
Paul Mosca, M.D., Ph.D., M.B.A.
Associate Professor of Surgery

Title:
Associate Vice Chair, Network General Surgery

Training:
M.D., University of Virginia School of Medicine, 1995

Residency:
General Surgery, Duke University Medical Center, 2002

Fellowship:
Ph.D., Biophysics, University of Virginia, 1994

Clinical Interests:
General surgery and surgical oncology, with special interest in melanoma and tumors of the liver, pancreas, upper and lower GI tract, skin, and soft tissues.

Research Interests:
Dr. Mosca’s research focuses on two areas. One is the development of more effective and entirely novel treatments for melanoma. He has a special interest in immunotherapy, novel targeted molecular therapies, and regional chemotherapy for advanced melanoma of the arm or leg. Another area of interest is palliative surgery for cancer, with an emphasis on understanding the optimal role and application of this type of surgery in the care of advanced malignancy.

Leila Mureebe, M.D., M.P.H.
Associate Professor of Surgery

Training:
M.D., Medical College of Pennsylvania, 1992

Residency:
General Surgery, Medical College of Pennsylvania, 1999

Fellowship:

Other Training:
M.P.H., University of North Carolina at Chapel Hill, 2011

Clinical Interests:
Vascular and endovascular surgery; diagnosis and management of the full spectrum of arterial and venous diseases; minimally invasive procedures for vascular disease, including endograft repair of aortic aneurysms, angioplasty, and stenting of the carotid, renal, and mesenteric arteries as well as angioplasty and stenting of the arteries to treat peripheral vascular disease.
**Thomas L. Novick, M.D.**
Assistant Professor of Surgery

**Training:**
M.D., Duke University School of Medicine, 1978

**Residency:**
General Surgery, Duke University Medical Center
Orthopaedic Surgery, Duke University Medical Center

**David M. Ota, M.D.**
Professor of Surgery

**Training:**
M.D., University of Chicago Pritzker School of Medicine, Illinois, 1973

**Residency:**
General Surgery, Johns Hopkins Hospital, Maryland, 1973–1975

**Fellowship:**
Surgery (Research), University of Texas Medical School–Houston, 1975–1976

**Clinical Interests:**
Clinical trials in breast, thoracic, and gastrointestinal cancers; current and future trials for surgical patients.
Theodore Pappas, M.D.
Professor of Surgery

Title:
Distinguished Professor of Innovative Surgery
Chief, General and Advanced Gastrointestinal Surgery
Vice Dean for Medical Affairs

Training:
M.D., The Ohio State University School of Medicine, 1981

Residency:
Surgery, Brigham and Women's Hospital, Massachusetts, 1981–1988

Clinical Interests:
Gastrointestinal surgery; advanced laparoscopic surgery; surgical complications of pancreatitis; benign and malignant esophageal, biliary, pancreatic and gastric disease; complicated abdominal-wall reconstructions.

Research Interests:
Dr. Pappas' laboratory is engaged in several areas of research, all relating to gastrointestinal physiology. They are currently studying: (1) Upper gut motility as it relates to the cyclooxygenase pathway; (2) Colonic motility as it relates to short chain fatty acid (SCFA); (3) The role of pig small intestine as a prosthetic agent in the treatment of gastrointestinal perforation.

Chan Park, M.D.
Assistant Professor of Surgery

Training:
M.D., Jefferson Medical College of Thomas Jefferson University, Pennsylvania, 2005

Residency:
General Surgery, University of Hawaii Affiliated Program, 2005–2010

Fellowship:
Bariatric and Minimally Invasive Surgery, Duke University Medical Center, 2010–2012

Clinical Interests:
Minimally invasive and advanced laparoscopic, robotic, single incision, and endoscopic approaches to diseases of the esophagus, stomach, small bowel, colon, solid organs, hiatal and abdominal wall hernias; benign and malignant gastrointestinal tumors; metabolic and weight loss surgery, sleeve gastrectomy, adjustable gastric banding, Roux-en-Y gastric bypass, and revisional bariatric surgery.
Alexander Perez, M.D.
Assistant Professor of Surgery

**Title:**
MSII Core Course Director, Department of Surgery

**Training:**
M.D., Universidad El Bosque, Colombia, 2000

**Residency:**
Surgery, Brigham and Women's Hospital, Massachusetts, 2002–2003
Surgery, Baystate Medical Center, Massachusetts, 2003–2007

**Fellowship:**
Gastrointestinal Surgery Research, Brigham and Women's Hospital, Massachusetts, 2000–2002
Minimally Invasive Surgery, Duke University Medical Center, 2007–2008

**Clinical Interests:**
Advanced minimally invasive surgery for diseases of the stomach, intestine, gallbladder, pancreas, spleen, adrenal gland, and hernias.

Lisa Clark Pickett, M.D.
Assistant Professor of Surgery
Assistant Professor of Medicine

**Title:**
Chief Medical Officer, Duke University Hospital

**Training:**
M.D., Harvard Medical School, 1994

**Residency:**
Critical Care, Duke University Medical Center, 1998
General Surgery, Duke University Medical Center, 2001

**Clinical Interests:**
Laparoscopic hernia repair; routine and complex ventral and inguinal hernias; hernias in women; abdominal-wall reconstruction; critical care; quality and care redesign.

**Research Interests:**
(1) Hernias database: Dr. Pickett is reviewing all the hernias performed at Duke in the last seven years to create a resource for retrospective and prospective study of patients coming to the Duke Hernia Center; (2) Surgisis mesh: Cook Surgical has provided a $5,000 unrestricted grant for preparing a video of Surgisis mesh placement in a patient with infected ventral hernia mesh. Drs. Pickett and Pappas continue to use this mesh in patients with infected hernias and plan to publish a case series; (3) Enterra device: Drs. Pickett and Pappas continue to work with Medtronic to place Enterra gastric pacing devices in patients with severe gastroparesis.
Dana Portenier, M.D.
Assistant Professor of Surgery

Title:
Chief, General Surgery, Duke Regional Hospital
Program Director, Duke Minimally Invasive and Bariatric Surgery Fellowship

Training:
M.D., Medical University of South Carolina, 1999
Residency:
General Surgery, Providence Hospital, Michigan, 1999–2004
Fellowship:
Traveling Hepato-Pancreatico-Biliary Fellow, Mayo Clinic, Minnesota; Memorial Sloan-Kettering Cancer Center, New York; Saint James University Hospital, Leeds, England, 2004–2005
Other Training:
Minimally Invasive and Bariatric Surgery, Duke University Medical Center, 2005–2006

Clinical Interests:
Minimally invasive approach to upper-GI surgery for diseases of the esophagus, stomach, liver, pancreas, adrenal glands, spleen, small bowel, and colon; complicated revisional foregut and bariatric surgery; developing new techniques in the field of single-incision surgery; weight loss surgery.
David B. Powers, M.D., D.M.D.
Professor of Surgery

**Training:**
M.D., University of Texas Health Science Center–San Antonio School of Medicine, 2000
D.M.D., University of Kentucky College of Dentistry, 1990

**Residency:**
Internship, General Surgery, San Antonio Uniformed Services Health Education Consortium, Wilford Hall US Air Force Medical Center (Texas), 2001
Oral and Maxillofacial Surgery, San Antonio Uniformed Services Health Education Consortium, Wilford Hall US Air Force Medical Center (Texas), 2002

**Other Training:**
Fellow, American College of Surgeons
Fellow, Royal College of Surgeons (Edinburgh) ad hom
Fellow, American Academy of Cosmetic Surgeons
Fellow, American Association of Oral and Maxillofacial Surgeons

**Clinical Interests:**
Craniomaxillofacial trauma and reconstruction, with a clinical focus on the management of high-energy transfer and ballistic injuries to the facial skeleton; orthognathic and craniofacial surgery for developmental, congenital and acquired facial deformities; prosthetic facial reconstruction after oncologic ablative surgery; surgical management of sleep disordered breathing (sleep apnea); surgical treatment of snoring and oral surgical procedures for the medically compromised patient.
Kadiyala Ravindra, M.B.B.S.
Associate Professor of Surgery

Title:
Program Director, Abdominal Transplant Fellowship

Training:
M.B.B.S., Jawaharlal Institute of Postgraduate Medical Education and Research, India, 1987

Residency:
General Surgery, Jawaharlal Institute of Postgraduate Medical Education and Research, India, 1988–1992
Surgical Gastroenterology, Sanjay Gandhi Post-Graduate Institute of Medical Sciences, India, 1992–1994

Fellowship:
Hepatobiliary and Pancreatic Surgery, St. James University Hospital, United Kingdom, 2000–2003
Transplant Surgery, University of Nebraska Medical Center, 2003–2005

Clinical Interests:
Hepatobiliary and pancreatic surgery, laparoscopic liver resections, cholangiocarcinoma, surgery for chronic pancreatitis, abdominal organ transplantation (liver, kidney, pancreas).

Henry Rice, M.D.
Professor of Surgery Professor in Pediatrics

Title:
Division Chief, Pediatric General Surgery

Training:
M.D., Yale University School of Medicine, 1988

Residency:
General Surgery, University of Washington Medical Center, 1996

Fellowship:
Pediatric Surgery, Children’s Hospital of Buffalo, 1998

Clinical Interests:
Neonatal surgery, prenatal counseling, general pediatric thoracic and abdominal surgery.
Sanziana Roman, M.D.
Professor of Surgery

**Title:**
Director, Endocrine Surgery Fellowship and Scholars Program, Duke Surgery
Chief of General Surgery, Durham VAMC
Associate Chief of Surgery for Clinical Affairs, Durham VAMC

**Training:**
M.D., Columbia University College of Physicians and Surgeons, 1994

**Residency:**
Internship, Surgery, Yale New Haven Hospital, 1994–1995

**Other Training:**
B.A., Cornell University, 1990
Fellow, American College of Surgeons

**Clinical Interests:**
Endocrine surgery, including adrenal, thyroid and parathyroid benign diseases and cancers; advanced stage cancer; medullary and anaplastic thyroid cancer; familial syndromes (i.e., multiple endocrine neoplasia 1, 2 A and B, FMTC, von Hippel-Lindau, etc.); minimal access/minimally invasive parathyroidectomy and laparoscopic techniques, including posterior retroperitoneoscopic adrenalectomy.

Randall Scheri, M.D.
Associate Professor of Surgery

**Training:**
M.D., University of Virginia, 1996

**Residency:**
General Surgery, Barnes Hospital/Washington University in St. Louis, 1996–2003

**Fellowship:**
Surgical Oncology, John Wayne Cancer Institute, California, 2004–2007

**Clinical Interests:**
Endocrine surgery, including for disorders of the thyroid, parathyroid glands, and adrenal glands; minimally invasive techniques, including radio-guided parathyroidectomy; thyroidectomy with recurrent laryngeal nerve monitoring; laparoscopic adrenalectomy; surgical oncology, including for melanoma and malignant diseases of the breast; clinical trials; sentinel lymph-node biopsy; neoadjuvant endocrine therapy and chemotherapy for breast conservation.
Vanessa Teaberry Schroder, M.D., B.S.
Assistant Professor of Surgery

Training:
M.D., Duke University School of Medicine, 2006

Residency:
General Surgery Resident, Duke University School of Medicine, 2013

Fellowship:
Surgical Critical Care, Surgery, Duke University School of Medicine, 2014

Clinical Interests:
Acute care and elective general surgery, surgical critical care, and surgical nutrition.

Research Interests:
Surgical nutrition

Hilliard Foster Seigler, M.D.
Professor of Surgery
Professor of Immunology

Training:
M.D., University of North Carolina at Chapel Hill, 1960

Residency:
Surgery, University of North Carolina at Chapel Hill, 1960–65

Fellowship:
National Institutes of Health Fellowship, Duke University Medical Center, University of North Carolina at Chapel Hill, 1965–67

Clinical Interests:
Surgical oncology, melanoma, benign and malignant breast and gastrointestinal diseases

Research Interests:
Dr. Seigler’s laboratory is involved with tumor immunobiology with special interest in human melanoma. The laboratory is current focusing on the cellular and humoral responses to melanoma tumor cell vaccines. They completed Duke University’s first gene therapy program utilizing autologous melanoma cells transduced with the gene for human gamma interferon. The serological and cellular studies indicated that patients made a significant and measurable response to immunization with these gene-modified tumor cells. We immunized 100 patients with autologous dendritic cells pulsed with either autologous tumor lysate or specific melanoma tumor peptides. The cell-mediated immune response to the vaccines was addressed in a serial fashion. At the present time, we are evaluating HLA identical donor stem cells in an effort to produce graft vs. tumor responses in patients with metastatic melanoma.
**Keri A. Seymour, D.O.**
Assistant Professor of Surgery

**Training:**
D.O., Midwestern University, Arizona College of Osteopathic Medicine, 2007
M.A., B.A., Boston College, Chestnut Hill, 1999

**Residency:**

**Fellowship:**
Research Fellow, SUNY Upstate Medical University, 2009–2011
Minimally Invasive and Bariatric Surgery, Duke University Medical Center, 2015

**Kevin N. Shah, M.D.**
Assistant Professor of Surgery

**Training:**
M.D., Drexel University College of Medicine, Pennsylvania, 2007

**Residency:**
General Surgery, Cleveland Clinic, Ohio

**Fellowship:**
Surgical Oncology and Hepatobiliary Surgery, Duke University Medical Center

**Clinical Interests:**
Surgical treatment of upper gastrointestinal malignancies, particularly benign and malignant diseases of the liver, pancreas and bile duct; minimally invasive HPB, duodenal and gastric surgery.

**Research Interests:**
Improving outcomes from HPB surgery; pancreatic cancer, pancreatic cysts, primary and metastatic tumors of the liver.
Mark Shapiro, M.D.
Associate Professor of Surgery

Title:
Associate Director, Trauma Services
Chief, Acute Care Surgery

Training:
M.D., Ross University, Dominica, 1997

Residency:
The Jewish Hospital of Cincinnati, 1997–2002

Fellowship:
Trauma and Critical Care, University of Cincinnati, 2002–2003

Clinical Interests:
Ventilator-associated pneumonia, shock, and resuscitation; blunt cerebrovascular injuries; thoracic trauma; hypertonic saline in sepsis and trauma; surgical education; evidence-based outcomes; acute care surgery; surgical infection.

Cynthia Shortell, M.D.
Professor of Surgery
Associate Professor in Radiology

Title:
Vice Chair, Faculty Affairs, Department of Surgery
Chief, Vascular Surgery
Program Director, Vascular Fellowship

Training:
M.D., Weill Cornell Medical College, 1984

Residency:
General Surgery, University of Rochester, New York, 1984–1989

Fellowship:
Vascular Surgery, University of Rochester, 1989–1993

Clinical Interests:
Open and endovascular aortic repair, thrombolytic therapy for acute arterial and venous occlusions, endovascular and minimally invasive therapies for venous disorders, percutaneous interventions for lower-extremity occlusive disease, vascular anomalies.
Courtney A. Sommer, M.D., M.P.H.
Assistant Professor of Surgery

Training:
M.D., University of North Carolina at Chapel Hill School of Medicine, 2006
M.P.H., University of North Carolina at Chapel Hill Gillings School of Public Health, 2010

Residency:
General Surgery, University of North Carolina Hospitals, 2013

Fellowship:
Surgical Critical Care and Trauma, Harborview Medical Center - University of Washington, 2014

Clinical Interests:
Care of the multiply injured trauma patient, surgical infections, trauma surgery, general and emergency general surgery, surgical critical care, and surgical nutrition.

Research Interests:
Surgical education, trauma systems development, education and prevention of trauma, care of the elderly trauma patient, implementation of protocols, and surgical nutrition.
Julie Sosa, M.D., M.A.
Professor of Surgery
Professor of Medicine

Title:
Chief, Section of Endocrine Surgery
Leader, Endocrine Neoplasia Diseases Group, Duke Cancer Institute
Director, Health Services Research, Department of Surgery

Training:
M.D., Johns Hopkins University School of Medicine, 1994

Residency:
Internship, Surgery, Johns Hopkins Hospital, 1994–1995
Assistant Resident, Surgery, Johns Hopkins Hospital, 1995–1996
Senior Resident, Surgery, Johns Hopkins Hospital, 1998–2000
(Chief Resident, 2000–2001)

Fellowship:
Robert Wood Johnson Clinical Scholar, Johns Hopkins Hospital, 1996–1998
Surgical Oncology, Johns Hopkins Hospital, 2001–2002

Other Training:
A.B., Princeton University, 1988
Fellow, American College of Surgeons

Clinical Interests:
Endocrine surgery, including surgery for thyroid cancer; minimally invasive parathyroidectomy and laparoscopic adrenalectomy (posterior retroperitoneal); clinical trials; surgical oncology

Research Interests:
Dr. Sosa is widely published in outcomes analysis as well as cost-effectiveness analysis, meta-analysis, and survey-based research. Her research group is multi-disciplinary, and she has collaborators in health services research and outcomes, biostatistics, geriatrics, endocrinology, oncology, vascular surgery, breast surgery, pharmacology and cancer biology, and stem cell research.
John H. Stewart, IV, M.D., M.B.A.
Associate Professor of Surgery

Training:
M.D., Howard University College of Medicine (Washington, DC), 1995

Residency:
Temple University School of Medicine (Pennsylvania), 1995–1998
Vanderbilt University Medical Center (Tennessee), 2002–2004

Fellowships:
Surgical Oncology, National Cancer Institute (Maryland), 1998–2002

Clinical interests:
Treatment of malignant melanoma, renal cell cancer, soft tissue sarcomas, mesothelioma, and cancers of the colon, rectum, and appendix

Debra Sudan, M.D.
Professor of Surgery
Professor in Pediatrics

Title:
Chief, Abdominal Transplant Surgery

Training:
M.D., Wright State University, Boonshoft School of Medicine, Ohio, 1989

Residency:
General Surgery, Wright State University, Ohio, 1994

Fellowship:
Solid Organ Transplantation, University of Nebraska, 1996

Clinical Interests:
Abdominal organ transplantation, including liver, intestine, kidney, and pancreas; pediatric transplantation; intestinal failure; intestine-lengthening surgery (STEP and Bianchi) for patients with short-bowel syndrome; hepatobiliary surgery; laparoscopic liver resection.
Ranjan Sudan, M.D.
Associate Professor of Surgery
Associate Professor of Psychiatry and Behavioral Sciences
Title:
Vice Chair of Education, Department of Surgery
Training:
M.D., Armed Forces Medical College, India, 1981
Residency:
Surgery, Wright State University, Ohio, 1999
Fellowship:
Child and Adolescent Psychiatry, Columbia University, 1993
Clinical Interests:
Laparoscopic, bariatric, GI, robotic surgery, weight loss surgery.

Julie K. Marosky Thacker, M.D.
Assistant Professor of Surgery
Title:
Medical Director, Enhanced Recovery Program
Training:
M.D., Indiana University School of Medicine, 1998
Residency:
General Surgery, University of Utah Health Sciences Center, 1998–2004
Fellowship:
Colon and Rectal Surgery, Mayo Clinic, Minnesota, 2005
Clinical Interests:
Surgical treatment of primary and recurrent colon and rectal cancer; laparoscopic colon and rectal surgery; surgical management of inflammatory bowel disease, polyposis syndromes, complex pelvic tumors, and anorectal disease.

Elisabeth Tomlinson Tracy, M.D.
Assistant Professor of Surgery
Training:
M.D., Harvard Medical School, 2005
Residency:
General Surgery, Duke University Medical Center, 2005–2012
Fellowship:
Pediatric Surgery, Boston Children’s Hospital, 2012–2014
Steven Vaslef, M.D., Ph.D.
Associate Professor of Surgery
Assistant Professor in Anesthesiology

Title:
Chief, Trauma/Critical Care Surgery
Program Director, Surgical Critical Care Fellowship

Training:
M.D., University of Virginia, 1984

Residency:

Fellowship:
Surgery (Research), Northwestern University, 1986–1989

Other Training:
Ph.D., Biomedical Engineering, Northwestern University, 1990

Clinical Interests:
Trauma, surgical critical care, gastrointestinal surgery, general surgery, surgical infections.

Research Interests:
Current research interests include: the development of an implantable artificial lung; design and evaluation of membrane oxygenators; evaluation of blood substitutes; treatment and physiology of shock; and gastrointestinal tonometry.

Cory Joseph Vatsaas, M.D.
Assistant Professor of Surgery

Training:
M.D., University of Minnesota, Twin Cities, 2008

Residency:
General Surgery Resident, Mayo School of Health Sciences

Fellowship:
Surgical Critical Care Fellow, University of Michigan at Ann Arbor
Deepak Vikraman, M.D.
Assistant Professor of Surgery

Training:
M.D., Trivandrum Medical College, India, 1998

Residency:
Basic Surgical Training, Leeds United Teaching Hospitals, United Kingdom, 1999–2002
General Surgery, Georgetown University Hospital, 2002–2007

Fellowship:
Transplant Surgery, Duke University Medical Center, 2007–2009

Clinical Interests:
Abdominal solid-organ transplantation, including pediatric/adult liver and pancreas; kidney and small intestine transplantation; general surgery; laparoscopic and hepatobiliary surgery.

Jun Wang, M.D.
Medical Instructor in the Department of Surgery

Training:
M.D., Tianjin Medical University (China), 1988

Residency:
Chief Resident, Surgery, Tianjin Medical University (China)
Resident, Surgery, Tianjin Medical University (China)
Rebekah White, M.D.
Associate Professor of Surgery

Training:
M.D., Duke University School of Medicine, 1997
Residency:
General Surgery, Duke University Medical Center, 1997–2005
Fellowship:
Surgical Oncology, Memorial Sloan-Kettering Cancer Center, New York, 2005–2007

Clinical Interests:
Surgical oncology with special interest in hepatobiliary, pancreatic, and upper gastrointestinal tumors.

Jin Yoo, M.D.
Assistant Professor of Surgery

Training:
M.D., University of Virginia School of Medicine, 2002
Residency:
Fellowship:
Minimally Invasive Surgery/Bariatric Surgery, Duke University Medical Center, 2009–2010

Clinical Interests:
Advanced laparoscopic and bariatric surgery, including surgical management of GERD, achalasia, benign and malignant gastric tumors, pancreatic and adrenal disease, splenectomy, Roux-en-Y gastric bypass, and adjustable gastric.
Sabino Zani Jr., M.D.
Assistant Professor of Surgery

Training:
M.D., Albany Medical College, 2003

Residency:
General Surgery, University of Connecticut Integrative, 2003–2010

Fellowship:
Surgical Oncology, Duke University Medical Center, 2010–2012

Other Training:
B.S., Biology, Rensselaer Polytechnic Institute, 1997
M.S., Biology, Rensselaer Polytechnic Institute, 1999

Clinical Interests:
Surgical oncology; benign and malignant hepatobiliary, pancreatic, and gastrointestinal disease; advanced laparoscopic surgery.

Michael R. Zenn, M.D., M.B.A.
Professor of Surgery

Titles:
Director, Human Fresh Tissue Laboratory
Residency Program Director, Plastic Surgery
Vice Chief, Plastic and Reconstructive Surgery

Training:
M.D., Weill Cornell Medical College, New York, 1988

Residency:
General Surgery, New York Hospital, Cornell Medical Center, 1988–1993
Plastic Surgery, Massachusetts General Hospital, 1993–1995

Fellowship:
Microsurgery of the Breast, Head, and Neck, Memorial Sloan-Kettering Cancer Center, New York, 1995

Other Training:
M.B.A., Duke University, Fuqua School of Business, 2012

Clinical Interests:
General reconstructive surgery, microsurgery, breast reconstruction, head and neck reconstruction, cosmetic surgery, DIEP, GAP, and SIEA flaps, other perforator flaps.
Duke Cardiovascular and Thoracic Surgery

From lung transplantations to heart valve repair, faculty members in Duke's Division of Cardiovascular and Thoracic Surgery provide the most advanced forms of treatment available in the country. U.S. News and World Report ranked Duke 7th in the nation in cardiology and heart surgery. Duke's diverse team of cardiothoracic experts lead a curriculum widely recognized as the best academic training program in the U.S.

Peter Smith, M.D.
Professor of Surgery

Title:
Division Chief, Cardiovascular and Thoracic Surgery

Training:
M.D., Duke University School of Medicine, 1977

Residency:
Cardiovascular Research, Duke University Medical Center, 1987
Teaching Scholar, AHA Clinician Scientist Awardee, Duke University Medical Center, 1980–83

Clinical Interests:
Adult cardiac surgery with emphasis on coronary artery disease and valvular heart surgery.

Research Interests:
Dr. Smith is the principal investigator for the Duke site in the Cardiotoracic Surgery Clinical Trials Network (CTSN) and in recent years has focused on clinical research. Topics include comparing CABG alone to CABG with mitral repair for moderate ischemic mitral regurgitation, as well as FFR and angiographically guided CABG. An integration of clinical research, publications, and scholarship with the advancement of clinically effective thoracic surgery is the goal of his research activities.
Albert S.Y. Chang, M.D.
Assistant Professor of Surgery

Training:
M.D., Duke University School of Medicine, 1996

Residency:
General Surgery, Baylor College of Medicine, Texas, 2003

Fellowship:
Cardiovascular and Thoracic Surgery, Cleveland Clinic, Ohio, 2006

Clinical Interests:
Lung and esophageal cancer; esophageal, pulmonary, mediastinal chest wall and diaphragm surgery; minimally invasive thoracoscopic and laparoscopic surgery; airway surgery; gastroesophageal reflux disease; hyperhidrosis; achalasia; hiatal hernia and paraesophageal hernia repair.

Thomas D'Amico, M.D.
Professor of Surgery

Title:
Chief, Section of General Thoracic Surgery
Vice Chair of Surgery
Chief Medical Officer, Duke Cancer Institute
Program Director, Thoracic Fellowship

Training:
M.D., Columbia University College of Physicians and Surgeons, 1987

Residency:
Thoracic Surgery, Duke University Medical Center, 1987–1996

Fellowship:
Thoracic Oncology, Memorial Sloan-Kettering Cancer Center, 1996

Clinical Interests:
Lung and esophageal cancer; general thoracic and thoracoscopic surgery; minimally invasive thoracic surgery; thoracic oncology; lung volume reduction; photodynamic therapy (PDT); laser bronchoscopy; bronchial and esophageal stents; molecular biology of lung and esophageal cancer.

Research Interests:
Lung cancer: (1) The role of molecular markers in the prognosis and therapy of lung cancer; (2) Genomic analysis lung cancer mutations. Esophageal cancer: (1) The role of molecular markers in the prognosis and therapy of esophageal cancer; (2) Genomic analysis esophageal cancer mutations.
Mani Daneshmand, M.D.
Assistant Professor of Surgery

Training:
M.D., Albany Medical College, 2004

Residency:
General Surgery, Duke University Medical Center, 2004–2011

Fellowship:
Cardiothoracic Surgical Research, Duke University Medical Center, 2006–2008
Cardiothoracic Surgery, Duke University Medical Center, 2011–2013

Clinical Interests:
Cardiac and lung transplantation, left ventricular assist devices, adult cardiac surgery, mitral valve surgery, surgical treatments for end-stage congestive heart failure, aortic valve surgery.

Jeffrey Gaca, M.D.
Assistant Professor of Surgery

Training:
M.D., Columbia University College of Physicians and Surgeons, 1998

Residency:
General Surgery, Duke University Medical Center, 1998–2005

Fellowship:
Cardiothoracic Surgery, Duke University Medical Center, 2005–2008

Clinical Interests:
Adult cardiac surgery, thoracic aortic surgery, minimally invasive approaches to valvular heart disease.
Donald Glower Jr., M.D.
Professor of Surgery

Training:
M.D., Johns Hopkins University, 1980

Residency:
Surgery, Duke University Medical Center, 1980–1987

Fellowship:
Thoracic Surgery, Duke University Medical Center, 1987–1989

Clinical Interests:
Minimally invasive valve and coronary surgery; valve repair and replacement; robotic heart surgery; septal myectomy for hypertrophic obstructive cardiomyopathy; minimally invasive maze procedure for atrial fibrillation.

Research Interests:
Current clinical research projects examine the effects of patient characteristics and surgical technique in outcomes after minimally invasive cardiac surgery, valve repair and replacement, and coronary artery bypass grafting. Prior work has examined the role of surgical therapy versus medical therapy in aortic dissection, load-independent means to quantify left and right ventricular function, and management of complex coronary disease.

John C. Haney, M.D., M.P.H., B.A.
Assistant Professor of Surgery

Training:
M.D., Duke University School of Medicine, 2004

Residency:
General Surgery, Duke University, 2004–2011

Fellowship:
Cardiothoracic Surgery Resident, Duke University, 2011–2014

Other Training:
M.P.H., Boston University, 2000

Clinical Interests:
Adult cardiac surgery including coronary artery revascularization and valve surgery; lung transplantation; extracorporeal life support therapies for cardiac and respiratory failure; ex-vivo lung perfusion; and surgical treatment of chronic thromboembolic pulmonary hypertension.
David Harpole Jr., M.D.
Professor of Surgery
Associate Professor in Pathology

Title:
Vice Chief, Division of Surgical Sciences

Training:
M.D., University of Virginia School of Medicine, 1984

Residency:
General Surgery, Duke University Medical Center, 1984–1991

Fellowship:
Thoracic Surgery, Duke University Medical Center, 1991–1993
Thoracic Oncology, Dana Farber Cancer Institute, Harvard Medical School, 1993–1995

Clinical Interests:
Thoracic oncology; general thoracic surgery; benign and malignant disease of the lung, esophagus, and mediastinum; advanced airway and thoracoscopic surgery; hyperhidrosis palmaris; mesothelioma.

Research Interests:

Matthew Hartwig, M.D.
Assistant Professor of Surgery

Training:
M.D., Duke University School of Medicine, 2001

Residency:

Fellowship:
Thoracic Surgery Research Fellow, Duke University Medical Center, 2003–2005

Clinical Interests:
Thoracic oncology with an emphasis on minimally invasive approaches to lung and esophageal cancer; video-assisted thoracic surgery (VATS) and robotic-assisted thoracic surgery (RATS); benign and malignant diseases of the lung, esophagus, mediastinum, and chest wall; surgical treatment of end-stage lung disease, including lung-volume reduction and lung transplantation; ex-vivo lung perfusion; donation after cardiac death; extracorporeal life support for respiratory failure.
G. Chad Hughes, M.D.
Associate Professor of Surgery

Title:
Director, Aortic Surgery Program

Training:
M.D., Duke University School of Medicine, 1995

Residency:
General Surgery, Duke University Medical Center, 1995–2002
Cardiothoracic Surgery, Duke University Medical Center, 2002–2005

Fellowship:
Thoracic Aortic Surgery, Hospital of the University of Pennsylvania, 2005

Clinical Interests:
Adult cardiac surgery; surgery of the thoracic aorta, including disorders of the aortic root, ascending aorta, aortic arch, and descending and thoracoabdominal aorta; thoracic endovascular aortic repair (TEVAR); transcatheter aortic valve implantation (TAVI); aortic valve repair.

Robert D.B. “Jake” Jaquiss, M.D.
Professor of Surgery

Title:
Chief, Pediatric Cardiothoracic Surgery

Training:
M.D., Vanderbilt University School of Medicine, 1986

Residency:
Surgery, Washington University Medical Center, 1986–1990
Cardiothoracic Surgery, Washington University Medical Center, 1992–1994

Fellowship:
Cardiac Surgery (Research), Washington University in St. Louis, 1990–1992
Pediatric Cardiothoracic Surgery, St. Louis Children’s Hospital, Missouri, 1994–1995

Clinical Interests:
Surgical treatment of congenital and acquired heart disease in children, surgical treatment of congenital heart disease in adults, neonatal heart surgery, mechanical circulatory support, pediatric cardiac transplantation.
Shu Lin, M.D., Ph.D.
Associate Professor of Surgery
Associate Professor in Pathology
Assistant Professor in Immunology

Training:
M.D., Duke University School of Medicine, 1992
Residency:
General Surgery, Duke University Medical Center, 1992–2001
Thoracic Surgery, Duke University Medical Center, 2001–2004
Other Training:
Ph.D., Immunology, Duke University Medical Center, 2000

Clinical Interests:
Cardiopulmonary transplantation (heart, lung and heart-lung transplantation), transplant immunology, adult cardiac surgery including CABG and valvular surgery.

Research Interests:
Two challenges of cardiopulmonary transplantation are the lack of consistent long-term graft survival and the shortage of donor organs. In searching for solutions to these problems, Dr. Lin's laboratory studies: (1) Mechanisms underlying the chronic rejection, especially that of lung and heart-lung allografts; (2) Induction of immunologic tolerance to reduce the morbidity and improve the long-term survival of heart and lung transplantation; (3) Xenotransplantation, with the ultimate goal of alleviating the problem of donor organ shortage but the more immediate goal of gaining general knowledge about transplantation immunobiology.

Andrew Lodge, M.D.
Associate Professor of Surgery
Associate Professor in Pediatrics

Training:
M.D., Duke University School of Medicine, 1993
Residency:
General Surgery, Duke University Medical Center, 1993–2000
Thoracic Surgery, Duke University Medical Center, 2000–2002
Fellowship:
Pediatric Cardiac Surgery, Children's Hospital of Philadelphia, 2002–2003

Clinical Interests:
Pediatric cardiac surgery, adult congenital heart disease, heart transplantation, ventricular assist devices.

Research Interests:
Extracorporeal circulation, ventricular assist, clinical outcomes after congenital heart surgery.
Terry S. Lowry, M.D.
Assistant Professor of Surgery

Training:
M.D., University of North Carolina at Chapel Hill School of Medicine, 1996

Residency:
General Surgery, University of Rochester Medical Center (New York), 2002

Fellowship:
Cardiothoracic Surgery, University of Rochester Medical Center (New York), 2005

Clinical Interests:
CABG, valve, and thoracic surgery

Carmelo Milano, M.D.
Professor of Surgery

Training:
M.D., University of Chicago, 1990

Residency:

Fellowship:
Molecular Cardiology, Howard Medical Institute, Duke University, 1992–1994
Cardiothoracic Surgery, Duke University Medical Center, 1997–1999
Cardiac Transplant, Papworth Hospital, England, 1999

Clinical Interests:
Cardiac transplantation, left ventricular assist devices, adult cardiac surgery, mitral valve surgery, surgical treatments for end-stage congestive heart failure, aortic valve surgery.
Mark Onaitis, M.D.
Associate Professor of Surgery

Training:
M.D., Duke University School of Medicine, 1997

Residency:
Thoracic Surgery, Duke University Medical Center, 2004–2007

Fellowship:
Surgery Research, Duke University Medical Center, 1999–2001

Clinical Interests:
Thoracic oncology; general thoracic surgery; benign and malignant
disease of the lung, esophagus, mediastinum, and chest wall.

Research Interests:
Mouse models of foregut malignancies, normal tissue and cancer stem cells risk prediction in thoracic malignancies.

Jacob Schroder, M.D.
Assistant Professor of Surgery

Training:
M.D., Georgetown University School of Medicine, 2001

Residency:
Internship, General Surgery, Duke University Medical Center, 2001–2002
Junior Assistant Resident, General Surgery, Duke University Medical Center, 2002–2003
Senior Assistant Resident, General Surgery, Duke University Medical Center, 2006–2008
Chief Resident, General Surgery, Duke University Medical Center, 2008–2009
Thoracic and Cardiovascular Surgery, Duke University Medical Center, 2009–2012

Fellowship:
Cardiothoracic Surgery Research Fellow, Duke University Medical Center, 2003–2006

Clinical Interests:
Cardiac transplantation, mechanical circulatory support devices and heart failure surgery, adult cardiac surgery, cardiothoracic surgical education.
William P. Sweezer Jr., M.D.
Assistant Professor of Surgery

Training:
M.D., Meharry Medical College, Tennessee, 1977

Residency:
General Surgery, Baylor College of Medicine, Texas, 1977–1981
General Surgery, Creighton University, Nebraska, 1981–1982
General Surgery, Henry Ford Hospital, Michigan, 1982–1983

Fellowship:
Endovascular Surgery, Columbia Presbyterian Hospital, New York, 2007

Clinical Interests:
Adult cardiac surgery, including thoracic, endovascular, peripheral vascular, and thoracoscopic surgery; mediastinal tumors; thoracic surgical oncology.

Betty Tong, M.D., M.H.S., M.S.
Assistant Professor of Surgery

Training:
M.D., Duke University School of Medicine, 1999

Residency:
General Surgery, Johns Hopkins Hospital, 1999–2005

Fellowship:
Thoracic Surgery, Duke University Medical Center, 2005–2008

Other Degrees:
M.S., Mechanical Engineering, Georgia Institute of Technology, 1995
M.H.S., Graduate Training Program in Clinical Investigation, Johns Hopkins Bloomberg School of Public Health, 2009

Clinical Interests:
Thoracic oncology including lung cancer and mesothelioma, esophageal cancer, and chest wall tumors; diseases of the mediastinum; pulmonary metastases; minimally invasive/video-assisted thoracic surgery; benign lung and chest conditions.
**David C. White, M.D.**
Associate Professor of Surgery

**Training:**
M.D., University of Virginia School of Medicine, 1996

**Residency:**
General Surgery, Duke University Medical Center, 1996–2003

**Fellowship:**
Thoracic Surgery, Duke University Medical Center, 2003–2006

**Clinical Interests:**