

Duke Residency Program in Cardiothoracic Surgery



Candidate Guide 2019-2020

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Dear Applicant:

We would like to welcome you to Durham on behalf of the Division of Cardiothoracic Surgery. We are grateful for your interest in the Residency Program in Thoracic Surgery at Duke and hope that over the course of your interview experience, you come away with shared enthusiasm about our Program.

This brochure has been provided to assist you in this most important process of selecting a Training Program. Within the pages you will find information regarding the history of Duke's medical campus and the Department of Surgery as well as summaries regarding current faculty and residents, recent graduates, and hospitals.

It is our educational mission to train cardiothoracic surgeons who are of the highest clinical caliber and who are committed to careers in which they will continue to advance the field of surgery through research, education, and leadership activities. We are dedicated to providing an environment in which exceptional individuals of diverse backgrounds are welcome and positioned to succeed.

There are clearly a number of factors to be considered when choosing a training program. It is our opinion that one of the most important is the track record of recent graduates. Our 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, Duke graduates obtain the most highly sought-after academic jobs and specialty training fellowship programs.

We encourage you to take the opportunity to truly explore the opportunities present at Duke. If we can provide any further information to assist you in this process, please do not hesitate to contact any one of us.

Sincerely yours,



Peter K. Smith, M.D.
Professor of Surgery
Chief, Division of Cardiothoracic Surgery



Thomas A. D'Amico, M.D.
Professor of Surgery
Program Director, Thoracic Surgery



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



John C. Haney, M.D., M.P.H.
Assistant Professor of Surgery Associate
Assistant Program Director, Thoracic Surgery

Duke University Medical Center History

1891

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

1924

James B. Duke established The Duke Endowment and directs that part of his \$40 million gift be used 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 began in Hospital Administration, Dietetics, and Medical Technology on August 15th. The eighteen third-year and thirty first-year medical students began classes on October 2nd. **1931**

The Duke School of Nursing's first class of twenty-four undergraduate students began classes on January 2nd.

Dedication ceremony for Duke Medical School and Hospital is held on April 20th.

Private Diagnostic Clinics were organized September 15th.



Duke Hospital Main Entrance, Circa 1940

Duke University Medical Center History (continued)

1940

First wing added to Duke Hospital.

The 65th General Hospital was authorized as an affiliated unit of the Duke University School of Medicine on October 17th.

1957

Outpatient and Private Diagnostic Clinic plus Hanes and Reed private floors and operating rooms were opened.

The original Medical School and Hospital were renamed "Duke University Medical Center."

1966

New Hospital Entrance, the Woodhall Building, was opened.

1980

The new \$94.5 million, 616-bed Duke Hospital was opened, bringing the total number of patient beds to more than 1,000.

1998

The Duke University Health System - an integrated academic health care system serving a broad area of central North Carolina - was officially created as Duke established partnerships with Durham 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 Duke University Health System expansion included the development of the Hospital Addition for Surgery Building.

2009

Duke University Health System (DUHS) moved 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 (DUH).

2012

On February 27, 2012, a new landmark opened its doors on Duke's medical center campus—the seven-story, 267,000-square-foot Duke Cancer Institute. More than just state-of-the-art space, it's an environment designed to transform the experience of every patient welcomed inside. The new Cancer Institute consolidates outpatient cancer services and clinical research from across the campus into a patient-centered, multidisciplinary center.

2013

The Duke Medicine Pavilion at Duke University Hospital opened in July 2013. The Pavilion is an eight-story building of approximately 580,000 square feet, and includes 16 new operating suites, 96 critical care beds and 64 intermediate care beds. The operating suites feature the latest in surgical technologies, as well as intraoperative CT and MRI scanners. 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 serve as a state-of-the-art training and education facility for the nearly 900 residents and fellows at Duke who comprise one of the largest training programs in the United States.

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



Duke Medicine Pavilion at Duke University Hospital, 2013.

Duke Surgery

Department Chairmen

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 (Dr. Hart had the unique privilege of having been selected by Dr. William Stewart Halsted to join the surgical training program at Johns Hopkins University). 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 – a technique that, ultimately, was widely accepted across the country.



J. Deryl Hart, M.D.
1930-1960

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 to be so today. Under the leadership of the successive chairs -- Drs. Clarence E. Gardner (1960-1964), David C. Sabiston, Jr. (1964-1994), and Robert W. Anderson (1994-2003) 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.



Clarence Gardner, M.D.
1960-1964

Dr. David C. Sabiston, Jr., a North Carolina native, completed medical school and surgical training at Johns Hopkins Hospital under the mentorship of Dr. Alfred Blalock. Although his accomplishments were many during this time, 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. Despite these significant efforts, 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.



David C. Sabiston, Jr., M.D.
1964-1994

Duke Surgery Department Chairmen

continued

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.



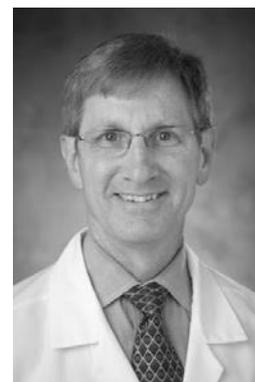
Robert W. Anderson, M.D., M.B.A.
1994-2003

Dr. Jacobs was recruited to Duke in 2003 where he served as Chair until his departure in 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. Over his nine years at Duke, Dr. Jacobs was highly committed to the success of all three missions within the Department of Surgery. He left Duke with the Department stronger than when he arrived and in a good position for his successor to continue the legacy of success that is Duke Surgery.



Danny O. Jacobs, M.D., M.P.H.
2003-2012

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.



Allan D. Kirk, M.D., Ph.D.
2014-present

History of Cardiothoracic Surgery at Duke

Dr. David C. Sabiston Jr. was one of the architects of the modern training program in cardiothoracic surgery. When he arrived at Duke in 1964, he established an integrated program in general and thoracic surgery, the model for the current integrated programs that have recently been approved by the American Board of Thoracic Surgery. Dr. Sabiston was a preeminent surgeon and surgical scientist, but many cite his most important accomplishment as the development of academic surgical training and his success in training academic surgeons. Over the years 1964-94, he trained 154 chief residents, of which 95 became cardiothoracic surgeons. Of these chief residents, 103 went on to academic positions, with 41 becoming either division chiefs or department chairmen. Finally, he was instrumental in the development of the careers of 4 subsequent Presidents of the American Association for Thoracic Surgeons.

In 1994, Dr. Peter K. Smith was named as the Chief of the Division of Cardiothoracic Surgery. In conjunction with the Program Directors and Faculty, Dr. Smith has continued the tradition of clinical and academic excellence that was fostered by Dr. Sabiston. While, the Program has been progressive and dynamic, with many changes over the years (including the abolition of in-hospital call), the mission of the Division—to train academic thoracic surgeons—had been promoted. Specifically, 30 of the most recent 35 graduates from our traditional program have successfully attained a position in academic surgery. In the future, the Program will continue to dedicate itself to Dr. Sabiston's tradition: the mission of training academic thoracic surgeons.

Duke General Thoracic Surgery

The Duke General Thoracic Surgery Program was one of the original Thoracic Track Training Programs, and we continue to lead in the training of academic general thoracic surgeons. The state of North Carolina has one of the nation's highest incidences in both lung cancer and esophageal cancer, and Duke has the largest clinical Lung Cancer Surgery and Esophageal Cancer Surgery Programs in both the state and Southeast Region. Over the past 2 decades, the Program has also distinguished itself as a leader in minimally invasive thoracic surgery. Duke was the lead accrual site in the first multi-institutional clinical trial of thoracoscopic lobectomy, and our volume continues to be one of the highest in the country. Moreover, our clinical research program is unsurpassed—the majority of the faculty members have advanced training in clinical research—and the program actively integrates our residents in clinical research, as evidenced by resident presentations at national meetings and publications. In addition to our minimally invasive lung cancer and esophageal cancer programs, we also have well-developed programs in robotics, benign esophageal disease, lung volume reduction, tracheal surgery, and interventional procedures (RFA, PDT, EMR, EBUS, EUS, laser, stents). Finally, as one of the largest programs in the Duke Cancer Institute, the Thoracic Oncology Program attracts patients from the Southeast and other regions in the country, as well as internationally.

Lung Transplantation Program

The Duke Lung Transplant Program was established in 1992 and has become one of the top lung transplant programs in the world. Since that time, nearly 1800 lung transplant have been performed. The program routinely performs more than 100 lung transplants per year and is projected to perform approximately 150 transplants this year. One-year survival is approximately 90% and is significantly better than expected (SRTR.ORG). The program has excellent outcomes in transplanting patients who have not historically been candidates for lung transplantation, such as people 70 and older, patients with cystic fibrosis whose lungs are colonized with resistant pathogens, patients with coronary artery and/or valvular heart disease, and critically ill people who require mechanical ventilation or ECMO (extracorporeal membrane oxygenation). The program has the highest transplant rate of any lung transplant program in the US. Patients have a median wait time of 12 days and mortality on the waitlist is uncommon. The primary focus of the program is on innovation that addresses the primary limitations in lung transplant: an inadequate supply of donor lungs, primary graft dysfunction and failure, and insufficient long-term survival of the patient and the lung allograft. Duke has been a pioneer in increasing the number of useable lungs including the use of ex vivo lung perfusion (EVLV). Translation of experimental data into the clinic has allowed Duke's primary graft dysfunction rate to be one of the lowest in the country. Sentinel observations at Duke have led to the understanding of the importance of environmental exposures to lung allograft injury, particularly aspiration events related to gastric reflux, has fundamentally altered care of lung transplant recipients. Tolerance trials have been initiated. The first successfully tolerant lung transplant recipient using cadaveric lung and bone marrow is now over 3 years out from her lung transplant and off all immunosuppression for over 2 years. The Duke program is focused on exceptional clinical care, innovation and the training of physicians and surgeons to be leaders in lung transplantation.

Duke Cardiac Surgery

The Cardiac Surgery program at Duke has a long and storied history beginning in the 1950's with pioneering research in hypothermia which led to its universal adoption in the conduct of cardiopulmonary bypass. Coronary artery bypass grafting was introduced to our specialty by Dr. David C. Sabiston, Jr, and has been a cornerstone of our program. Two of our faculty (Wil Gay and Paul Ebert) developed and introduced cold potassium cardioplegia as the fundamental adjunct along with cardiopulmonary bypass for most cardiac surgical procedures performed today. Among many "firsts" achieved at Duke, valve replacement for endocarditis, valve resuspension in aortic dissection and the surgical treatment of cardiac arrhythmias stand out.

More than 30,000 cardiac operations have been performed at Duke, with the current annual rate being more than 1200. Of interest to applicants, Duke's cardiac volume has increased over the past 5 years as we have differentiated specialty programs that match the needs of future surgeons. During the 1990's, over 75% of our procedures were isolated CABG. Today, that figure is less than 30%, but still amounts to 400-500 procedures per year. We feel that this is an appropriate number for today's training needs, and still perform more than 90% of CABGs with cardiopulmonary bypass support as resident cases.

The large number of isolated coronary bypass procedures has been replaced by equivalent numbers of valve, valve coronary, endovascular, aortic, cardiac/lung transplant and ventricular assist device procedures. We have several programs that are nationally and internationally recognized, and all of our programs are regional leaders. This change has been consistent with the changing demands of our specialty and there are no "gaps" in appropriate clinical training opportunities.

Cardiac surgery is almost always performed for longevity benefit, and its efficacy has been fundamentally supported by extensive clinical research. We have continued that tradition with the award of the Cardiothoracic Surgical Research Network award from the NHLBI in 2006, with continued funding as a primary site through 2018. Associated with this, we have been awarded an NHLBI Clinical Skills Development site award that funds Master's degree training in clinical research. Each year, we have two scholars enrolled in clinical research, and they actively work with our Thoracic Residents in clinical research projects. Thoracic residents are thus able to actively participate in clinical research with appropriate support. Among many examples, Duke has published extensively in the area of treatment selection in coronary artery disease from our databank on more than 60,000 patients who have had cardiac catheterization and/or cardiac surgery. This dataset is unique in having a medical therapy component, and has long term mortality outcome as the key endpoint for hypothesis testing.

Duke Valve Surgery Program

The Duke Valve Surgery Program performs approximately 400 valve procedures annually, including 250 AVR, 30 Bentall, 125 mitral repair, 75 MVR, 70 AVR/CAB, 40 mitral/CAB, 30 tricuspid, 50 maze procedures, 100 minimally invasive mitrals including robotics, 60 minithorac AVRs, 60 TAVR. Each resident finishes having performed and having competence in all of these standard open procedures, with numbers more than sufficient for thoracic or cardiac track boards. Residents have opportunity to perform more advanced minimally invasive procedures like robotic MVR, mini-thoracotomy MVR and AVR, and TAVR based upon their interest and time spent on the service. A simulation laboratory and wet labs are being working into the residency to hone specific advanced technical skills. All residents finish with alternative cannulation, hybrid operating, and wire skills that will be needed for future procedures like percutaneous MVR and that are useful in high-risk open procedures like re-do cardiac surgery.

Heart Transplant Program

The Duke Heart transplant program was initiated in 1985. For the past decade, our volume has been consistently between 50 and 60 heart transplants per year. Duke is the largest heart transplant program in the southeast and usually one of the top five programs nationally for volume. Average wait times and survival outcomes are excellent and publically available on the SRTR registry website. Adult survival outcomes at one and three years post-transplant are better than expected national outcomes. Pediatric heart transplants are also performed at Duke with recent volumes ranging between 5-10 per year.

Mechanical Circulatory Support Program

The Duke MCS program has been in existence for approximately 15 years. Multiple types of devices for MCS are available at Duke for bridge to transplant, bridge to recovery and destination therapy. Implantable LVAD volumes have exceeded transplant volumes at approximately 70 procedures per year. Duke was the leading enrolling site in the

Heartware HVAD DT trial and the second leading enroller in the Heartmate II DT trial. Other clinical VAD trials active at Duke include REVIVE IT, ROADMAP and the Recover Right Impella trial.

Congenital Heart Surgery Program

The Congenital Heart Surgery Program at Duke University Medical Center is a robust, nationally recognized clinical and research center. The annual congenital surgical volume includes over 250 pump cases and over 400 total cases per year, with approximately 85% being pediatric and 15% being adult congenital cases. We perform the entire spectrum of congenital heart operations. Our mortality is consistently lower, and our case complexity mix is consistently higher than the average reported by other centers. The program is supported by a dedicated 13 bed pediatric cardiac ICU in addition to the 16 bed PICU.

We have a long history of contributions in both basic and clinical research in pediatric cardiac surgery. We have been a core center in the NHLBI Pediatric Heart Network, and participate in a number of multicenter trials. In addition, the Duke Clinical Research Institute is the data coordinating center for the STS Congenital Heart Database. Numerous graduates of the Duke Thoracic Surgery Residency have gone on to become congenital heart surgeons, including eight who are current chiefs of their respective divisions.

The experience of the cardiothoracic surgery resident at Duke includes participation in all operative cases, management of the patients with the multi-disciplinary team in the ICU and on the wards, and participation in the weekly multi-specialty case conference that has been regarded as one of the most educational conferences in the program. At the current time we do not have a congenital heart surgery fellowship program. The operative experience for the resident is therefore undiluted and includes more than enough cases to satisfy all board requirements. The resident will gain experience as the operating surgeon on a variety of congenital heart defects, including re-operative cases. Overall the rotation provides a comprehensive overview of congenital heart surgery.

Aortic Surgery Program

The Duke Center for Aortic Disease was established in July of 2005 and has subsequently grown into one of the largest thoracic aortic surgery programs in the world performing over 200 major aortic operations annually, including more than 50 thoracic endovascular aortic repairs and over 100 cases utilizing deep hypothermic circulatory arrest each year. The Duke program is internationally recognized for pioneering work in the field of hybrid aortic repair with series of hybrid arch and thoracoabdominal repair among the largest in the world. Graduates of the Duke Cardiothoracic Training Program desiring to focus on Aortic Surgery during their 3rd year of training finish with extensive hands-on experience in all areas of thoracic aortic surgery including valve-sparing aortic root replacement, conventional Bentall and bio-Bentall root replacement, open and hybrid aortic arch replacement, endovascular and conventional open descending aortic replacement, as well as conventional and hybrid thoracoabdominal aortic aneurysm repair. Graduates of the program with an interest in Aortic Surgery also have the opportunity to spend time in the Aortic Disease Clinic where they gain valuable knowledge of pre- and post-operative evaluation and management of patients with thoracic aortic disease, including connective tissue disorders such as Marfan and Loeys-Dietz syndromes. Graduates also gain extensive experience in the interpretation of echocardiography and CT and MR angiography for the evaluation of aortic disease.

The Duke Thoracic Aortic Surgery Database is a prospectively maintained database containing records on over 1200 patients undergoing thoracic aortic surgery at Duke since 2005, and the Aortic Program has published over 60 peer-reviewed manuscripts with more than 100 regional, national, and international presentations since 2005 on various topics in thoracic aortic disease. Residents in the Duke program are major participants in this research with numerous national presentations and published manuscripts based on data from this database.

Duke is also a large referral center for transcatheter aortic valve replacement (TAVR) with high volume experience with both the commercially available Edwards Sapien and investigational Medtronic CoreValve devices, one of only a handful of centers in the U.S. with access to both devices, and currently ranks 3rd in overall enrollment in the Medtronic CoreValve trials. Current TAVR volumes at Duke are over 100 cases annually with further growth anticipated with the opening of the 2nd Duke Hybrid OR after the move to the Duke Medical Pavilion. All Duke Cardiac Surgery residents graduate with extensive experience in TAVR.

The Integrated Training Program in Thoracic Surgery

Currently, there are three training programs in Thoracic Surgery at the Duke University Medical Center: the Integrated Program, the Joint Training Program (4/3 program for residents who have started their General Surgery training at Duke and wish to train in Thoracic Surgery, and the Traditional Thoracic Surgery Training Program. These programs are all designed to develop academic cardiothoracic surgeons. At the completion of their training, residents will demonstrate proficiency in all clinical aspects of cardiothoracic surgery and will have extensive experience and training in clinical research.

Residents in the integrated program will gain experience in general and vascular surgery, critical care, cardiac anesthesia and cardiac catheterization, as well as in adult and congenital cardiac and thoracic surgery. Our program includes training in four locations: Duke University Hospital, Durham VA Medical Center and Duke Regional Hospital in Durham, NC.

The first three years of the curriculum (PGY 1-3) provide balanced and broad training in general, vascular and cardiothoracic surgery. Research opportunities are available following the PGY 3 year of training. The PGY 4-6 years provide focused training in general thoracic, congenital, adult cardiac and aortic surgery.

The educational curriculum is designed to augment the resident's operative and clinical experiences. Weekly didactic conferences, attending rounds and grand rounds augment the TSDA curriculum. Residents will also participate in clinical conferences, including multidisciplinary thoracic oncology conference, heart and lung transplant listing conferences, congenital heart surgery teaching conference, and multidisciplinary cardiac surgery conference.

Academic and Professional Development

Upon entering the Program, residents will select an advisor/mentor, who will be integral to the clinical and academic development of each resident. The academic development of each of the residents in the training program is the responsibility of the mentor and the Program Director.

In order to enhance education and improve the national exposure, each resident has the opportunity to attend **two national meetings annually**, at the expense of the Division. Each resident attends one of the major academic meetings, such as the AATS and STS. In addition, each resident has the opportunity to attend an additional meeting, such as a technical course or review course. These opportunities are in addition to any meeting in which the resident is participating as a presenter.

Work-Hours

The schedule is designed to adhere to all RRC Duty Rules, including every other weekend off duty.

During the PGY 4-6 years, there is **NO IN-HOSPITAL call.**

Clinical Rotations

Year 1

Period	2 months	2 months	2 months	2 months	2 months	2 months
	Duke	Duke	Durham VA	Duke	Duke	Duke Durham VA
Service	General Surgery	Vascular Surgery	General and Vascular Surgery	Trauma Surgery	CT Surgery	Cardiac Anesthesia
Inpatient / Outpatient	Inpatient	Inpatient	Inpatient	Inpatient	Both	Inpatient
Exposure	Includes General Surgery, Abdominal Transplant Laparoscopy, Basic skills	Includes Vascular access, Percutaneous techniques	Includes General Surgery, Laparoscopy, Basic skills, Vascular access, Percutaneous techniques	Includes central lines, thoracostomy tubes, airway management, wound closure, basic skills	Includes conduit harvest, Opening and closing sternotomies, pacemakers, intra-aortic balloon pumps, Thoracoscopy, Tracheostomy, Chest tubes, Lung biopsies	Includes Echocardiography, pharmacology, central lines, arterial lines, airway management

Year 2

Period	2 months	2 months	2 months	2 months	2 months	1 month	1 month
Site	Durham VA	Duke	DRH	Duke	Duke	Duke	Duke
Service	General Surgery	SICU	General	CT ICU	CT Surgery	Pediatric Surgery	Plastic Surgery
Inpatient / Outpatient	Inpatient	Inpatient	Both	Inpatient	Both	Both	Both
Exposure	Includes General Surgery, Laparoscopy, Basic skills,	Includes Central lines, Chest Tubes, tracheostomy	Includes Laparoscopic cholecystectomy, fundoplication, esophageal myotomy	Includes Central lines, Intra-aortic balloon pumps, Chest tubes, tracheostomy, thoracentesis, arterial lines	Includes Conduit harvest, Opening and closing sternotomy, pacemakers, Intra-aortic balloon pumps	Includes all aspects of general surgery in the pediatric population (vascular access, hernia repair, abdominal surgery)	Includes skin/soft tissue, basic and complex reconstruction

Year 3

Period	2 months	1 month	1 month	1 month	2 months	2 months	2 months	2 months
Site	VA	Duke	Duke	Duke	Durham VA	Duke	Durham VA	Duke
Service	Vascular Surgery	Cardiac Catheterization	CCU	Surgical Oncology	General Thoracic Surgery	Cardiac Surgery	Cardiothoracic Surgery	General Surgery
Inpatient / Outpatient	Both	Both	Inpatient	Both	Both	Both	Both	Inpatient
Comment	Includes: Open and percutaneous central, Peripheral vascular cases	Includes: Adult cardiac catheterization	Includes: Central lines, Intra-aortic balloon pumps,	Includes: General surgical oncology (breast, endocrine, hepatobiliary, foregut and colorectal Malignancies)	Includes: General thoracic surgery	Includes: Conduit harvest, Opening and closing sternotomies, Pacemakers, Intra-aortic balloon pumps	Includes: Assisting major cardiac case	Includes: abdominal/ GI surgery, abdominal transplant, advanced laparoscopy

Year 4

General Thoracic	Heart and Lung Transplant	Aortic Surgery	Adult Cardiac
Duke	Duke	Duke	Duke
4 months	2 months	2 months	4 months

Year 5

Adult Cardiac	General Thoracic Surgery	Congenital
Duke	Duke	Duke
4 months	4 months	4 months

Year 6

Chief Resident (Adult Cardiac Surgery)	Elective	Cardiac and Thoracic Surgery
Duke	Duke	Durham VA
4 months	4 months	4 months

Clinical Programs

Adult Cardiac Surgery

Myocardial
Revascularization Valve Repair
and Replacement
Transcatheter Valve Replacement
Minimally Invasive Cardiac Surgery
Surgery for Atrial Fibrillation
Robotics

Aortic Surgery

Surgery for Aneurysms, Dissections
Stent Grafting

Surgery for Cardio-Pulmonary Failure

Heart Transplantation
Ventricular Assist
Pulmonary Transplantation
ECMO

General Thoracic Surgery

Lung Cancer
Esophageal Cancer
Mesothelioma
Benign Esophageal Disease
Minimally Invasive Thoracic Surgery
Robotics
Lung Volume Reduction Surgery
Tracheal Surgery
EBUS, RFA, PDT
Low-dose CT Screening

Congenital Cardiac Surgery

Pediatric Congenital
Adult Congenital

Affiliated Institutions

Duke University Medical Center

Consistently ranked as one of the top ten hospitals by US News & World Report, the 1,117-bed Duke University Hospital is a tertiary and quaternary care hospital. On its 210 acres, it is recognized as a model for hospitals of the future, with a Cancer Institute that opened in 2012 and a Medical Pavilion with state of the art operating rooms. The Medical Pavilion, which opened July 2013, is an eight-story building of approximately 580,000 square feet, and includes 16 new operating suites, 96 critical care beds and 64 intermediate care beds. The operating suites feature the latest in surgical technologies, as well as intraoperative CT and MRI scanners. The 64 new intermediate care beds allow for optimal transition of patients from intensive care beds to standard hospital rooms.

The Cardiothoracic Surgery Service draws patients from the across the Southeast, as well as from other national and international sites.



Durham Veterans Affairs Medical Center

The Duke training program is affiliated with the Durham VA Medical Center, a Deans' Committed Veterans Affairs Medical Center. This is a 274-bed general medical and surgical facility located across the street from Duke Hospital. The Durham VA 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.

There, residents conduct preoperative evaluation, operative procedures, and postoperative care on all patients. With supervision provided by the academic faculty of Duke University Medical Center, the rotations at the Durham VA provide a balanced exposure to cardiovascular and thoracic surgery.



Duke Regional Hospital (DRH)

DRH is a 369-bed acute care hospital that has been serving the community's healthcare needs for nearly 30 years. A comprehensive facility, Duke Regional 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 Duke Regional Rehabilitation Institute, and the Davis Ambulatory Surgical Center. It also features a nine-bed Coronary Care Unit and a 17-bed Intensive Care Unit. Among other services, Duke Regional Hospital houses the highly acclaimed Duke bariatric surgery and advanced laparoscopic programs.



Curriculum

In addition to the clinical experience, a comprehensive didactic teaching schedule is emphasized, based on a 3-year defined curriculum including topics in medical knowledge, patient care, practice-based learning, systems-based practice, communication, and professionalism.

The faculty and residents participate in a comprehensive conference schedule, designed to optimize clinical experience, didactic teaching, and interactive learning.

Thoracic Surgery Residency Educational Conferences (Duke Hospital)

Monday	6:30 PM	Residents' Teaching Conference
Tuesday	9:00 AM	Lung Transplant Conference
Wednesday	6:00 AM	Attending Rounds
Wednesday	6:45 AM	D&C / Heart Team
Wednesday	7:30 AM	Thoracic Surgery Grand Rounds
Wednesday	4:30 PM	Multidisciplinary Thoracic Oncology Conference
Thursday	7:00 AM	General Thoracic Surgery Conference
Thursday	7:30 AM	Heart Transplant Conference
Friday	7:30 AM	Pediatric Cath/Case Review Conference

Thoracic Surgery Residency Educational Conferences (Durham VA)

Wednesday	10:30 AM	VA Cath/Indications Conference
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General Surgery Residency Educational Conferences (Duke Hospital)

Monday	5:30 PM	Intern (PGY-1) Conference
Tuesday	6:30 AM	Duke Regional Conference
Wednesday	6:00 AM	Surgical M&M Case Conference*
Wednesday	7:00 AM	Surgical Grand Rounds Conference*
Wednesday	8:15 AM	SCORE Curriculum Conference*
Wednesday	9:30 AM	Simulation Lab
Thursday	7:00 AM	Durham VA Conference
Thursday	4:30 PM	Chairman Walk Rounds
Friday	4:30 PM	Chief Resident Conference

*General Surgery Major Conferences

Clinical Research

To promote the development of each resident as an academic surgeon, there is programmatic emphasis on excellence in clinical research. Some residents choose to participate in clinical research through the Duke Clinical Research Institute (DCRI), which houses one of the largest cardiovascular data banks in the world, as well as an array of professionals with expertise in clinical research, information technology, epidemiology, and biostatistics.

Throughout their training, residents will have the opportunity to complete multiple projects, with publications in major peer-reviewed journals. In addition, residents have access to resources related to the American College of Surgeons Oncology Group (ACOSOG) and the Alliance for Clinical Trials in Oncology.

Cardiovascular and Thoracic Surgery Faculty

Cardiovascular and Thoracic Surgery Faculty Members



DUMC Box 3442
Durham, NC 27710
smith058@mc.duke.edu

Peter Smith, M.D.
Professor of Surgery

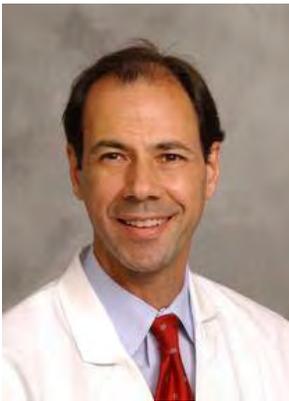
Title
Division Chief, Cardiovascular and Thoracic Surgery

Training
MD, Duke University School of Medicine, NC, 1977

Residency
Cardiovascular Research, Duke University Medical Center, NC, 1987
Teaching Scholar, AHA Clinician Scientist Awardee, Duke
University Medical Center, NC1980–83

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 Cardiothoracic 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.



DUMC Box 3496
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thomas.damico@duke.edu

Thomas D'Amico, M.D.
Gary Hock Endowed Professor of Surgery

Title
Vice-Chair of Surgery
Chief, Section of General Thoracic Surgery
Program Director, Thoracic Surgery

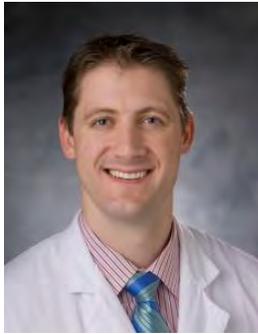
Training
MD, Columbia University College of Physicians and Surgeons, NY, 1987

Residency
Thoracic Surgery, Duke University Medical Center, NC, 1987-1996

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

Clinical Interests
Lung and esophageal cancer; general thoracic and thoroscopic 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) Role of molecular markers in the prognosis and therapy of lung cancer; (2) Genomic analysis lung cancer mutations. Esophageal Cancer: (1) Role of molecular markers in the prognosis and therapy of esophageal cancer; (2) Genomic analysis esophageal cancer mutations.



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Nicholas.AndersenMD@duke.edu

Nicholas Andersen, MD
Assistant Professor of Surgery

Training
MD, Harvard Medical School, 2008

Residency
General Surgery, Duke University Medical Center, NC, 2010-2015
Thoracic Surgery, Duke University Medical Center, NC, 2011-2017

Fellowship
Congenital Cardiac Surgery, Boston Children's Hospital and Harvard Medical School, 2017 - 2018

Clinical Interests
Basic and translational science in applied cardiovascular biology. 2. Basic and translational science in cardiac development and congenital heart diseases. Prior areas of study have included the molecular mechanisms of chamber formation during early heart development and the role of calcium signaling pathways in hypoplastic heart disease.



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Durham, NC 27710
ben.bryner@duke.edu

Benjamin Bryner, MD
Assistant Professor of Surgery

Training
MD, University of Michigan Medical School, 2009

Residency
General Surgery, University of Michigan Medical School, MI, 2009-2016
Thoracic Surgery, Duke University Medical Center, NC, 2016-2019

Clinical Interests
Adult Cardiac Surgery/Lung Transplantation



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jeffrey.gaca@duke.edu

Jeffrey G. Gaca, MD
Associate Professor of Surgery

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

Residency
General Surgery, Duke University Medical Center, NC, 1998-2005
Thoracic Surgery, Duke University Medical Center, NC, 2005-2008

Clinical Interests
Adult cardiac surgery, thoracic aortic surgery, minimally invasive approaches to valvular heart disease.



DUMC Box 3851
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glowe001@mc.duke.edu

Donald Glower, Jr., MD
Professor of Surgery

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

Residency
Surgery, Duke University Medical Center, NC, 1980-1987
Thoracic Surgery, Duke University Medical Center, NC, 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 outcome 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.



DUMC Box 31071
Durham, N 27710
john.haney@duke.edu

John Haney, MD, M.P.H.
Assistant Professor of Surgery

Title
Assistant Program Director, Thoracic Surgery MSII
Core Course Director, Department of Surgery

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

Residency
Surgery, Duke University Medical Center, NC, 2004-2011 Thoracic
Surgery, Duke University Medical Center, NC, 2011-2014

Other Training
M.P.H., Boston University, MA, 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.



DUMC Box 3627
Durham, NC 27710
david.harpole@duke.edu

David H. Harpole, Jr. MD
Professor of Surgery
Associate Professor in Pathology

Title:
Vice Chief, Division of Surgical Services

Training
MD, University of Virginia School of Medicine, VA, 1984

Residency
General Surgery, Duke University Medical Center, NC, 1984-1991
Thoracic Surgery, Duke University Medical Center, NC, 1991-1993

Fellowship
Thoracic Oncology, Dana Farber Cancer Institute, Harvard Medical School, MA, 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

Research Interests
Non-small cell lung cancer: (1) Evaluation of serum and tissue molecular biologic markers of recurrence in patients with a localized non-small cell lung cancer; (2) Molecular biologic staging of lymph nodes in patients with non-small cell lung cancer; (3) The evaluation of the clonality of metastatic tumors in patients with non-small cell lung cancer.



DUMC Box 3863
Durham, NC 27710
matthew.hartwig@duke.edu

Matthew G. Hartwig, MD
Associate Professor of Surgery

Title
Program Director, Thoracic Surgery Minimally Invasive Surgery Fellowship
Surgical Director of Lung Transplantation

Training
MD, Duke University School of Medicine, NC, 2001

Residency
Surgery, Duke University Medical Center, NC, 2001-2008 Thoracic Surgery, Duke University Medical Center, NC, 2008-2011

Fellowship
Thoracic Surgery, Research Fellow, Duke University Medical Center, NC, 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.



DUMC Box 3051
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gchad.hughes@duke.edu

G. Chad Hughes, MD
Professor of Surgery

Title
Director, Aortic Surgery Program

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

Residency
General Surgery, Duke University Medical Center, NC, 1995-2002
Cardiothoracic Surgery, Duke University Medical Center, NC, 2002-2005

Fellowship
Thoracic Aortic Surgery, Hospital of the University of PA, 2005

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



DUMC Box 3954
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jacob.klapper@duke.edu

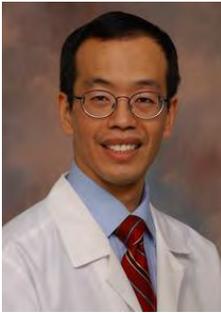
Jacob A. Klapper, MD
Assistant Professor of Surgery, Assistant Professor in Immunology

Training
M.D., Indiana University School of Medicine, IN, 2003

Residency
General Surgery, Indiana University School of Medicine, IN, 2003 - 2011
Thoracic Surgery, Duke University Medical Center, NC, 2011-2014

Other Training
Research Fellow, Surgery Branch, National Cancer Institute, MD, 2005-2008

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



DUMC Box 3392
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shu.lin@duke.edu

Shu Lin, MD, Ph.D.

Associate Professor of Surgery, Assistant Professor in
Immunology Assistant Professor in Pathology

Training

M.D., Duke University School of Medicine, NC, 1992

Residency

General Surgery, Duke University Medical Center, NC, 1992-2001
Thoracic Surgery, Duke University Medical Center, NC, 2001-
2004

Other Training

PhD, Immunology, Duke University Medical Center, NC, 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.



DUMC Box 3340
Durham, NC 27710
andrew.lodge@duke.edu

Andrew Lodge, MD Associate

Professor of Surgery Assistant
Professor in Pediatrics

Training

MD, Duke University School of Medicine, NC, 1993

Residency

General Surgery, Duke University Medical Center, NC, 1993-2000
Thoracic Surgery, Duke University Medical Center, NC, 2000-2002

Fellowship

Pediatric Cardiac Surgery, Children's Hospital of Philadelphia, PA, 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



DUMC Box 3043
 Durham, NC 27710
 milano02@mc.duke.edu
 u

Carmelo A. Milano, MD
 Professor of Surgery

Training

MD, University of Chicago Pritzker School of Medicine, IL, 1990

Residency

General Surgery, Duke University Medical Center, NC, 1990-1992, 1994-1997
 Cardiothoracic Surgery, Duke University Medical Center, NC, 1997-1999

Fellowship

Molecular Cardiology, Howard Hughes Medical Institute, Duke University, NC, 1992-1994
 Cardiac Transplant, Papworth Hospital, UK, 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



DUMC Box 3442
 Durham, NC 27710
 ryan.plichta@duke.edu

Ryan P. Plichta, MD
 Assistant Professor of Surgery

Training

MD, Loyola University Chicago Stritch School of Medicine IL, 2008

Residency

General Surgery Residency, Surgery, Loyola University Chicago Stritch School of Medicine, IL, 2008 – 2013
 Cardiothoracic Surgery Residency, Surgery, Loyola University Chicago Stritch School of Medicine, IL, 2013 - 2015

Fellowship

Advanced Aortic And Endovascular Surgery Fellowship, Cleveland Clinic, OH, 2015– 2016

Clinical Interests:

Aortic surgery, TAVR, adult cardiac surgery



DUMC Box 3642
 Durham, NC 27710
 jacob.schroder@duke.edu

Jacob N. Schroder, MD
 Assistant Professor of Surgery

Training

MD, Georgetown University School of Medicine, DC, 2001

Residency

General Surgery, Duke University Medical Center, NC, 2001-2009
 Thoracic and Cardiovascular Surgery, Duke University Medical Center, NC, 2009-2012

Fellowship

Cardiothoracic Surgery Research Fellow, Cardiothoracic Surgery, Duke University Medical Center, NC, 2003-2006

Clinical Interests

Cardiac transplantation, mechanical circulatory support devices and heart failure surgery, adult cardiac surgery, cardiothoracic surgical education



DUMC Box 3531
Durham, NC 27710
betty.tong@duke.edu

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

Title
Associate Program Director, Thoracic Surgery

Training
MD, Duke University School of Medicine, NC, 1999
MHS, The Johns Hopkins Bloomberg School of Public Health, MD, 2009

Residency
General Surgery, The Johns Hopkins Hospital, MD, 1999-2005
Thoracic Surgery, Duke University Medical Center, NC, 2005-2008

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; lung volume reduction; benign lung and chest conditions

Research Interests
Patient preferences and shared decision making
Surgical education and learning



DUMC Box 3642
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joseph.turek@duke.edu

Joseph Turek, MD, PhD, Chief Congenital Cardiac Surgery
Associate Professor of Surgery

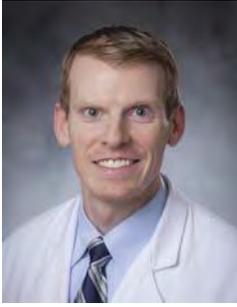
Training
MD, University of Illinois College of Medicine, IL 2002

Residency
General Surgery, Duke University Medical Center, NC, 2002 - 2007
Thoracic and Cardiovascular Surgery, Duke University Medical Center, NC, 2007-2010
Congenital Heart Surgery, Texas Children's Hospital, TX, 2010 – 2010

Fellowship
Congenital Heart Surgery, Children's Hospital of Philadelphia, PA 2010 – 2011

Clinical Interests
Neonatal heart surgery; Minimally invasive congenital heart surgery; Advanced aortic reconstructions.

Research Interests
Marfan syndrome; ECMO; Congenital heart disease.



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Durham, NC 27710
adam.r.william@duke.edu

Adam Williams, MD
Assistant Professor of Surgery

Training

MD, University of Miami Leonard M. Miller School of Medicine, 2007

Residency

General Surgery, University of Miami of Medicine, FL 2007 – 2009
Post-Doctoral Research Fellow, Surgery, Jackson Memorial Hospital, Miami, FL, 2009 -
2011 Senior Resident General Surgery Jackson Memorial Hospital, Miami, FL, 2011 – 2013
Chief Resident In General Surgery, Surgery, Jackson Memorial Hospital, Miami, FL, 2013 – 2014

Fellowship

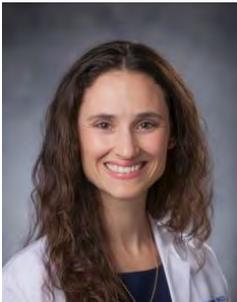
Cardiothoracic Surgery, Duke University Medical Center, NC 2014 – 2017

Clinical Interests

Coronary revascularization, valve surgery, TAVR, aortic surgery.

Research Interests

Regenerative therapy, aortic surgery.



DUMC Box 3531
Durham, NC 27710
Brittany.Zwischenberger
@duke.edu

Brittany Zwischenberger, MD
Assistant Professor of Surgery

Training

MD, University of Texas Southwestern Medical Center at Dallas Southwestern Medical School,
2010, 2007

Residency

General Surgery Resident, Surgery, University of Kentucky at Lexington, 2010 - 2015
Thoracic Surgery Resident, Surgery, Duke University School of Medicine, 2015 - 2018

Clinical Interests

Adult cardiac surgery with an emphasis on minimally invasive cardiac surgery.

Current Residents

Current Residents

Integrated Training Program

2021



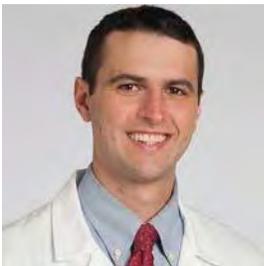
Jatin Anand, MD

Medical School: University of Miami Leonard Miller School of Medicine Career

Interest: Adult Cardiac Surgery

Email: jatin.anand@duke.edu

2023



Andrew Vekstein, MD, PhD

Medical School: Case Western University

Career Interest: Adult Cardiac Surgery

Email: andrew.vekstein@duke.edu

2024



Alejandro Murillo-Berlitz

Medical School: Universidad Latina de Costa Rica Facultad de Cienci

Career Interest: Adult Cardiac Surgery

Email: alejandro.murillo.berlitz@duke.edu

2025



Abigail Russell Benker

Medical School: Tufts University School of Medicine

Career Interest: Adult Cardiac Surgery Email:

Email: abigail.benker@duke.edu

Thoracic Surgery Integrated Research Fellowship

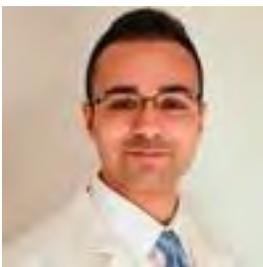


Julie Doberne, MD, PhD

Medical School: Oregon Health Sciences University School of Medicine

Career Interest: Adult Cardiac Surgery

Email: julie.doberne@duke.edu



Muath Bishawi, MD, MPH

Medical School: State University of New York at Stony Brook

Career Interest: Cardiac Surgery

Email: muath.bishawi@duke.edu

Traditional Training Program

2020



Sara Najmeh, MD

Medical School: McGill University, Faculty of Medicine

Residency: General Surgery, McGill University

Career Interest: General Thoracic Surgery

Email: sara.najmeh@duke.edu



Lori Soni, MD

Medical School: Northwestern University Feinberg School of Medicine

Residency: General Surgery, Columbia University

Career Interest: Adult Cardiac Surgery

Email: lori.soni@duke.edu

2020



Hai Salfity, MD

Medical School: Indiana University School of Medicine

Residency: General Surgery, Indiana University School of Medicine

Career Interest: Adult Cardiac Surgery

Email: hai.salfity@duke.edu



Charles M Wojnarski, MD

Medical School: Jagiellonian University Medical Collegedical Coll

Residency: General Surgery: Case Western Reserve University

Career Interest: Adult Cardiac Surgery

Email: charles.wojnarski@duke.edu



Douglas M Overbey, MD

Medical School: University of Missouri

Residency: General Surgery: University of Colorado

Career Interest: Adult Cardiac Surgery

Email: douglas.overbey@duke.edu

Joint Training Program

2020



Jeffrey Keenan, MD

Medical School: University of Maryland School of Medicine

Residency: General Surgery, Duke University Medical Center

Career Interest: Adult Cardiac Surgery

Email: jeffrey.keenan@duke.edu

2021



R. Patrick Davis, MD

Medical School: Michigan State University College of Human Medicine

Residency: General Surgery, Duke University Medical Center

Career Interest: General Thoracic Surgery

Email: robert.p.davis@duke.edu

2022



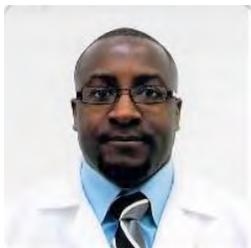
David Ranney, MD

Medical School: University of Michigan Medical School

Residency: General Surgery, Duke University Medical Center

Career Interest: General Thoracic Surgery

Email: david.ranney@duke.edu



Babatunde Yerokun, MD

Medical School: University of Chicago Pritzker School of Medicine Residency: General

Surgery, Duke University Medical Center

Career Interest: General Thoracic Surgery

Email: babatunde.yerokun@duke.edu

2023



Michael Sean Mulvihill, MD

Medical School: Duke University Medical Center

Residency: General Surgery, Duke University Medical Center

Career Interest: General Thoracic Surgery

Email: mike.mulvihill@duke.edu

Resident Publications

Jatin Anand, MD

Refereed journals

1. **Back stabber: ladder fall causing traumatic aortic transection.**
Academic Article
.... *Asian Cardiovasc Thorac Ann*, 27(4), 302–303. <https://doi.org/10.1177/0218492319834449> Yerokun, Babatunde A., **Jatin Anand**, Richard L. McCann, and G Chad Hughes. “Back stabber...”
2. **Scientific writing of novice researchers: what difficulties and encouragements do they encounter?**
Academic Article
...: *what difficulties and encouragements do they encounter?*. *Academic Medicine*, 84(4), 511–516. <https://doi.org/10.1097/ACM.0b013e31819a8c3c> Shah, **Jatin, Anand** Shah, and Ricardo Pietrobon...
3. **Willingness to participate in clinical trials among patients of Chinese heritage: a meta-synthesis.**
Academic Article
..., 8(1). <https://doi.org/10.1371/journal.pone.0051328> Limkakeng, Alexander, Amruta Phadtare, **Jatin** Shah, Meenakshi Vaghasia, Ding Ying Wei, **Anand** Shah, and Ricardo Pietrobon...
4. **Application description and policy model in collaborative environment for sharing of information on epidemiological and clinical research data sets.**
Academic Article
... César Araujo de, Adelia Portero Batilana, Julie Simkins, Henrique Martins, **Jatin** Shah, Dimple Rajgor, **Anand** Shah, Scott Rockart, and Ricardo Pietrobon. “Application description...”
5. **"Ghost" publications among applicants to a general surgery residency program.**
Academic Article
....04.029 Kuo, Paul C., Rebecca A. Schroeder, **Anand** Shah, **Jatin** Shah, Danny O. Jacobs, and Ricardo Pietrobon. ““Ghost” publications among applicants to a general surgery residency program...”
6. **Global research coaching in orthopedic surgery: seeding for an international network.**
Academic Article
... for an international network.. *Acta Ortopedica Brasileira*, 20(2), 110–117. <https://doi.org/10.1590/S1413-78522012000200010> Ferreira, Ana Paula Bonilauri, Dimple Rajgor, **Jatin** Shah, **Anand** Shah...
7. **Cholecystectomy concomitant with laparoscopic gastric bypass: a trend analysis of the nationwide inpatient sample from 2001 to 2008.**
Academic Article
...–229. <https://doi.org/10.1007/s11695-011-0575-y> Worni, Mathias, Ulrich Guller, **Anand** Shah, Mihir Gandhi, **Jatin** Shah, Dimple Rajgor, Ricardo Pietrobon, Danny O. Jacobs, and Truls Ostbye...
8. **Laparoscopic appendectomy outcomes on the weekend and during the week are no different: a national study of 151,774 patients.**
Academic Article
... *Surg*, 36(7), 1527–1533. <https://doi.org/10.1007/s00268-012-1550-z> Worni, Mathias, Truls Østbye, Mihir Gandhi, Dimple Rajgor, **Jatin** Shah, **Anand** Shah, Ricardo Pietrobon, Danny O...

Book Chapters

1. **Anand J**, Sabe AA, Cohn WE. Off-Pump Coronary Artery Bypass Grafting and Transmyocardial Laser Revascularization. In: Selke FW, del Nido PJ, Swanson SL, eds. Sabiston and Spencer’s Surgery of the Chest, Volume II, 9th Edition. Philadelphia: Elsevier, 2016:1589-1602
2. Rosengart TK, **Anand J**. Acquired Heart Disease—Valvular. In: Townsend CM, Beauchamp RD, Evers BM, Mattox KL eds. Sabiston Textbook of Surgery: The Biologic Basis of Modern Surgical Practice, 20th Edition. Philadelphia: Elsevier, 2016

Muath Bishawi, MD, MPH

Refereed journals

1. **Resident versus attending surgeon graft patency and clinical outcomes in on- versus off-pump coronary artery bypass surgery.**
Conference Paper
... *Surgery* (Vol. 150, pp. 1428–1435). <https://doi.org/10.1016/j.jtcvs.2015.08.124> Almassi, G Hossein, Brendan M. Carr, **Muath Bishawi**, A Laurie Shroyer, Jacquelyn A. Quin, Brack Hattler...
2. **Are Prophylactic Postoperative Antibiotics Necessary for Immediate Breast Reconstruction? Results of a Prospective Randomized Clinical Trial.**
Academic Article
... *Am Coll Surg*, 222(6), 1116–1124. <https://doi.org/10.1016/j.jamcollsurg.2016.02.018> Phillips, Brett T., Mitchell S. Fourman, **Muath Bishawi**, Mary Zegers, Brian J. O’Hea, Jason C...
3. **Comparison of Outcomes and Costs Associated With Aspirin ± Clopidogrel After Coronary Artery Bypass Grafting.**
Academic Article
... *Bypass Grafting.. The American Journal of Cardiology*, 121(6), 709–714.
<https://doi.org/10.1016/j.amjcard.2017.12.010> Ebrahimi, Ramin, Sandeep Gupta, Brendan M. Carr, **Muath Bishawi**...
4. **Mechanochemical ablation for symptomatic great saphenous vein reflux: A two-year follow-up.**
Academic Article
...). *Mechanochemical ablation for symptomatic great saphenous vein reflux: A two-year follow-up.. Phlebology*, 32(1), 43–48. <https://doi.org/10.1177/0268355515627260> Kim, Pamela S., **Muath Bishawi**...
5. **Mitochondria Released by Apoptotic Cell Death Initiate Innate Immune Responses.**
Academic Article
..., Minghua, Andrew S. Barbas, Liwen Lin, Uwe Scheuermann, **Muath Bishawi**, and Todd V. Brennan. “Mitochondria Released by Apoptotic Cell Death Initiate Innate Immune Responses...”
6. **Mitochondria Released by Apoptotic Cell Death Initiate Innate Immune Responses.**
Academic Article
... (11), 384–397. <https://doi.org/10.4049/immunohorizons.1800063> Zhu, Minghua, Andrew S. Barbas, Liwen Lin, Uwe Scheuermann, **Muath Bishawi**, and Todd V. Brennan. “Mitochondria Released...”
7. **Chronic obstructive pulmonary disease impact upon outcomes: the veterans affairs randomized on/off bypass trial.**
Academic Article
... *athoracsur.2013.05.055* Almassi, G Hossein, A Laurie Shroyer, Joseph F. Collins, Brack Hattler, **Muath Bishawi**, Janet H. Baltz, Ramin Ebrahimi, and Frederick L. Grover. “Chronic obstructive...”
8. **Surgeon judgment and utility of transit time flow probes in coronary artery bypass grafting surgery.**
Academic Article
... *1001/jamasurg.2014.1891* Quin, Jacquelyn, John Lucke, Brack Hattler, Sandeep Gupta, Janet Baltz, **Muath Bishawi**, G Hossein Almassi, Frederick L. Grover, Joseph Collins, and A Laurie Shroyer...
9. **Outcomes of carotid-subclavian bypass performed in the setting of thoracic endovascular aortic repair.**
Academic Article
... *-subclavian bypass performed in the setting of thoracic endovascular aortic repair.. J Vasc Surg*, 69(3), 701–709. <https://doi.org/10.1016/j.jvs.2018.07.022> Voigt, Soraya L., **Muath Bishawi**...
10. **Extracellular Mitochondrial DNA and N-Formyl Peptides in Trauma and Critical Illness: A Systematic Review.**
Academic Article
... (12), 2018–2028. <https://doi.org/10.1097/CCM.0000000000003381> Lubkin, David T., **Muath Bishawi**, Andrew S. Barbas, Todd V. Brennan, and Allan D. Kirk. “Extracellular Mitochondrial DNA...”
11. **Long-term Outcomes of Carotid-Subclavian Bypass in the Setting of Thoracic Endovascular Aortic Repair**
Conference Paper
... of *Thoracic Endovascular Aortic Repair. In Journal of Vascular Surgery* (Vol. 67, pp. E16–E16). Scottsdale, AZ: MOSBY-ELSEVIER. Voigt, Soraya L., **Muath Bishawi**, Richard L. McCann, and G...
12. **PATIENT-REPORTED SYMPTOMS AND REVASCULARIZATION STATUS AFTER CORONARY ARTERY BYPASS GRAFT SURGERY IN DIABETICS AND NON-DIABETICS**
Conference Paper
...-1097(15)61659-x Hattler, Brack, Brendan M. Carr, John Spertus, John Messenger, John Rumsfeld, Ramin Ebrahimi, **Muath Bishawi**, et al. “PATIENT-REPORTED SYMPTOMS AND REVASCULARIZATION STATUS...”

13. **Costs Five Years After Off-Pump or On-Pump Coronary Artery Bypass Surgery.**
Academic Article
 ..., Joseph F. Collins, G Hossein Almassi, Jacquelyn A. Quin, Frederick L. Grover, **Muath Bishawi**, A Laurie W. Shroyer, and A Laurie W. VA #517 Randomized On/Off Bypass (ROOBY) Study...
14. **IMPACT OF POST-OPERATIVE ATRIAL FIBRILLATION ON EARLY AND LATE OUTCOMES AFTER PROXIMAL AORTIC SURGERY**
Conference Paper
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1. **Proteomic Signatures of Space Radiation Induced Cardiovascular Degeneration**
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R. Patrick Davis, MD

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12. **Impact of ventricular assist device implantation on clinical and economic outcomes of heart transplantation in the United States from 2003-2007**
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Jeffrey Keenan, MD

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54. **Prevalence and Outcomes of Mitral Stenosis in Patients Undergoing Transcatheter Aortic Valve Replacement: Findings From the Society of Thoracic Surgeons/American College of Cardiology Transcatheter Valve Therapies Registry.**
Academic Article
..., Mohammad Bashir, Qun Xiang, **Babatunde A. Yerokun**, Roland Albert Matsouaka, Sreekanth Vemulapalli, Samir Kapadia, Joaquin E. Cigarroa, and Firas Zahr. "Prevalence and Outcomes..."
55. **Effect of Obesity and Underweight Status on Perioperative Outcomes of Congenital Heart Operations in Children, Adolescents, and Young Adults: An Analysis of Data From the Society of Thoracic Surgeons Database.**
Academic Article
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56. **Decline of Increased Risk Donor Offers on Waitlist Survival in Heart Transplantation.**
Academic Article
..., **Babatunde A. Yerokun**, Cameron R. Wolfe, Adam D. DeVore, et al. "Decline of Increased Risk Donor Offers on Waitlist Survival in Heart Transplantation..." *Journal of the American College...*
57. **Long-term Survival After Surgery Compared With Concurrent Chemoradiation for Node-negative Small Cell Lung Cancer.**
Academic Article
..., Shivani A. Shah, **Babatunde A. Yerokun**, Xiaofei F. Wang, Thomas A. D'Amico, Mark F. Berry, and David H. Harpole. "Long-term Survival After Surgery Compared With Concurrent..."
58. **A Risk Score to Assist Selecting Lobectomy Versus Sublobar Resection for Early Stage Non-Small Cell Lung Cancer.**
Academic Article
..... *Ann Thorac Surg*, 102(6), 1814–1820. <https://doi.org/10.1016/j.athoraesur.2016.06.032> Gulack, Brian C., Chi-Fu Jeffrey Yang, Paul J. Speicher, **Babatunde A. Yerokun**, Betty C. Tong...
59. **Adjuvant Chemotherapy Does Not Confer Superior Survival in Patients With Atypical Carcinoid Tumors.**
Academic Article
..., Michael S. Mulvihill, Paul J. Speicher, **Babatunde A. Yerokun**, Brian C. Gulack, Daniel P. Nussbaum, David H. Harpole, Thomas A. D'Amico, Mark F. Berry, and Matthew G. Hartwig...
60. **Long-term outcomes of surgical resection for stage IV non-small-cell lung cancer: A national analysis.**
Academic Article
...11.021 Yang, Chi-Fu Jeffrey, Lin Gu, Shivani A. Shah, **Babatunde A. Yerokun**, Thomas A. D'Amico, Matthew G. Hartwig, and Mark F. Berry. "Long-term outcomes of surgical resection for stage..."
61. **Surgical resection after neoadjuvant chemoradiation for oesophageal adenocarcinoma: what is the optimal timing?**
Academic Article
... Ranney, David N., Michael S. Mulvihill, **Babatunde A. Yerokun**, Zachary Fitch, Zhifei Sun, Chi-Fu Yang, Thomas A. D'Amico, and Matthew G. Hartwig. "Surgical resection..."
62. **Geographic Variations in Lung Cancer Lobectomy Outcomes: The General Thoracic Surgery Database.**
Academic Article
..., **Babatunde A. Yerokun**, John D. Mitchell, and Thomas V. Bilfinger. "Geographic Variations in Lung Cancer Lobectomy Outcomes: The General Thoracic Surgery Database..." *Ann Thorac Surg* 104...

63. **Incidence and Outcomes After Stroke on Rotary Flow Ventricular Assist Device Support**
Conference Paper
 ...Ranney, David Daneshmand, Mani Ali **Yerokun, Babatunde** Bishawi, Muath...
64. **Induction chemoradiation therapy prior to esophagectomy is associated with superior long-term survival for esophageal cancer.**
Academic Article
 ...**Yerokun, Babatunde** Englum, Brian Ganapathi, Asvin D'Amico, Thomas Anthony Wang, Xiaofei Speicher, Paul Hartwig, Matthew...
65. **Simultaneous or Sequential Heart-Liver Transplantation Confer Superior Survival in Patients with Listed for Heart-Liver Transplantation: A National Analysis**
Conference Paper
 ...**Yerokun, Babatunde** Barbas, Andrew Serghios Hartwig, Matthew Mulvihill, Michael...
66. **Elevated Donor HbA1C Confers Impaired Overall Survival Following Renal Allograft Transplantation in Recipients of Allografts from Donors with Diabetes Mellitus: A National Analysis**
Conference Paper
 ...Barbas, Andrew Serghios Hartwig, Matthew **Yerokun, Babatunde** Mulvihill, Michael...
67. **Predictors of Survival in Lung Transplant Recipients Requiring Post-Operative ECMO: First National Analysis**
Conference Paper
 ...Hartwig, Matthew Mulvihill, Michael **Yerokun, Babatunde** Ranney, David Daneshmand, Mani Ali...
68. **Simultaneous or Sequential Lung-Kidney Transplantation Confer Superior Survival in Renal-Failure Patients Undergoing Lung Transplantation: A National Analysis**
Conference Paper
 ...**Yerokun, Babatunde** Mulvihill, Michael Hartwig, Matthew...
69. **Preoperative Functional Independence and Employment Status Are Associated with Improved Long Term Survival After Lung Transplantation**
Conference Paper
 ...Mulvihill, Michael **Yerokun, Babatunde** Bishawi, Muath Hartwig, Matthew...
70. **Sequential Liver-Kidney Transplantation Is Equivalent to Simultaneous Liver-Kidney Transplantation in Candidates Requiring Dialysis Pre-Transplant**
Conference Paper
 ...Hartwig, Matthew Barbas, Andrew Serghios Mulvihill, Michael **Yerokun, Babatunde**...
71. **Center Variability in Organ Offer Acceptance and Waitlist Mortality in Lung Transplantation**
Conference Paper
 ...Hartwig, Matthew Mulvihill, Michael Klapper, Jacob A **Yerokun, Babatunde**...
72. **Impact of Ischemic Time on Primary Graft Dysfunction: A National Analysis**
Conference Paper
 ...Hartwig, Matthew Mulvihill, Michael **Yerokun, Babatunde**...
73. **Measuring the Quality of Gastric Cancer Care in the United**
Conference Paper
 ...Greenup, Rachel Adams Nussbaum, Daniel BlazerIII, Dan German Sun, Zhifei Niedzwiecki, Donna **Yerokun, Babatunde**...
74. **Simultaneous Heart-Kidney Transplantation Is Superior to Sequential Heart-Kidney Transplantation in Renal Failure Heart Transplant Candidates**
Conference Paper
 ...Milano, Carmelo Alessio Mulvihill, Michael **Yerokun, Babatunde** Hartwig, Matthew...
75. **Pacemaker Implantation After Mitral Valve Surgery With Atrial Fibrillation Ablation.**
Academic Article
 ...GlowerJr., Donald D. **Yerokun, Babatunde** Alexander, John Hunter Peel Harrison, John Kevin Smith, Peter Kent Milano, Carmelo Alessio Mathew, Joseph P....

Summary of Graduates

Positions of Recent Residents

Year	Resident	First Position	Academic
2019	Benjamin Bryner	Duke University	Academic
	Asvin Ganapathi	Ohio State	Academic
	Paul Speicher	Huntsville, Alabama	No
2018	Anthony Castleberry	Duke University, Transplant Fellowship	n/a
	Jennifer M Hanna	Duke University, Transplant Fellowship	n/a
	Brittany Zwischenberger	Duke University	Academic
2017	Mohamed Algahim	Duke University	Academic
	Nicholas Andersen	Boston Children's Congenital Fellowship	n/a
	Christopher Scott	University of Colorado	Academic
	Adam Williams	Duke University	Academic
2016	Jeffrey Javidfar	Emory University	Academic
	Asad Shah	Rex Healthcare	No
	Judson Williams	WakeMed	No
2015	Loretta Erhunmwunsee	City of Hope Cancer Center	Academic
	Matthew Gaudet	Ochsner	Academic
	Alexander Iribarne	Dartmouth-Hitchcock	Academic
2014	John "Jack" Haney	Duke	Academic
	Jacob Klapper	Medical University South Carolina	Academic
	Paul Tang	Duke	Academic
2013	Mani Daneshmand	Duke	Academic
	Chad Johnson	US Navy	Academic
	Ben Wei	University of Alabama, Birmingham	Academic

2012	Keshava Rajagopal	University of Maryland	Academic
	Jacob Schroder	Duke	Academic
	Jason Williams	US Air Force/UC Davis	Academic
2011	Mimi Ceppa	Indiana University	Academic
	Matthew Hartwig	Duke	Academic
	Anthony Lemaire	UMDNJ	Academic
2010	Edward Cantu	University of Pennsylvania	Academic
	Teng Lee	University of Maryland	Academic
	Joseph Turek	Children's' Hospital PA	Academic
2009	Berry, Mark	Duke	Academic
	Pal, Jay	U. Texas-San Antonio	Academic
	Williams, Matthew	Louisville	Academic
2008	Jeff Gaca	Duke	Academic
	Cyrus Parsa	Duke	Academic
	Betty Tong	Duke	Academic
2007	Zane Atkins	Air Force; Durham VA	Academic
	Sitaram Emani	Boston Children's	Academic
	Mark Onaitis	Duke	Academic
2006	Shankha Biswas	Riverside, CA	No
	Shari Meyerson	University of Arizona	Academic
	David White	Duke	Academic
2005	Chad Hughes	Duke	Academic
	Jeff Martin	Columbia, SC	No
	Ash Shah	Johns Hopkins	Academic
2004	William Burfeind	Duke	Academic
	Paul Chai	Tampa, FL	No
	Shu Lin	Duke	Academic

2003	Kimberly Gandy	Wisconsin-Milwaukee	Academic
	Cleveland Lewis	Goshen, NJ	No
2002	Allen Kypson	East Carolina	Academic
	Andy Lodge	Duke	Academic
	Larkin Daniels	Mobile, Alabama	No

Duke Graduate Medical Education

Employment & Benefits

- **Employment Requirements**
- **Requirement and Standards**
- **Stipends**
- **Sample Agreement of Appointment**
- **Program and GME Benefits**

Employment Requirements

The qualifications for membership to the Associate Medical Staff (Graduate Medical Trainee) eligibility are as follows:

- Graduates of medical schools in the United States and Canada accredited by the Liaison Committee on Medical Education (LCME).
- Graduates of colleges of osteopathic medicine in the United States accredited by the American Osteopathic Association (AOA).
- Graduates of medical schools outside the United States and Canada who meet one of the following qualifications:
 - Have received a currently valid certificate from the Educational Commission for Foreign Medical Graduates (ECFMG) or
 - Have a full and unrestricted license to practice medicine in a U.S. licensing jurisdiction.
- Graduates of medical schools outside the United States who have completed a Fifth Pathway program provided by an LCME-accredited medical school
- Have a North Carolina Full State License or Resident Training License (RTL). (see: Medical License)
- Official Medical School Transcript with conferred or graduated
- A completed Postgraduate Training Verification Form (if applicable)
- Current ACLS/BLS/PALS certification (see: ACLS/BLS/PALS Certification Policy)
- Proof of identity and US Employment Eligibility (I-9) via E-Verify (See: I-9 Form Policy) including SS Card
- Health Record Clearance, which includes drug screening (See: the Drug Testing Policy)
- A signed Agreement of Appointment (Contract)
 - The signed Graduate Medical Education Agreement of Appointment; is not effective, and employment will not commence, until all credentialing documents have been received and approved by the Office of GME and all requirements for hire have been satisfied.
- Application for Appointment, which requires:
 - 2 Reference forms
 - Criminal Background Check (includes EPLS & OIG check)
 - National Practitioner Databank check
 - ECFMG check (for International Medical Graduates)
- Completion of several payroll forms which include:
 - Duke Insurance Beneficiary Form
 - Health/Dental/Vision Enrollment Form
 - Reimbursement Accounts Enrollment Form (if applicable)
 - Acknowledgment Form
 - Foreign National Form (if applicable)
- Completion of all required Online Safety Training Modules and GME Learning Modules (See: Online Safety Training Modules and GME Modules) (Completed after Hire)
- USMLE (or equivalent) Transcript
 - Document passing scores in the first two parts of appropriate medical licensure examinations (USMLE Step I, Step 2CK and Step 2CS (if applicable), COMLEX, or equivalent Canadian examinations, etc.). After 24 months of post graduate training passing of all three parts of the licensing examinations must be provided.
 - This policy applies to all graduate medical trainees whether United States or International Medical School graduates. Programs have the right to impose more stringent requirements, but not less than those contained in this policy. An Agreement of Appointment will not be valid without satisfying this requirement. (*USMLE statement if trainee has not passed Step 3)
- Attend Institutional Orientation

A trainee may begin his/her clinical duties when he/she has met the above GME requirements.

Requirements and Standards

Essential Abilities Requirements/Technical Standards

A. Introduction

All candidates for any of the Duke Graduate Medical Education programs must meet the criteria necessary to successfully complete the program. To achieve the optimal educational experience and to maintain patient safety, trainees are required to participate in all phases of the training program. The study of medicine and its specialties and subspecialties is not a pure intellectual exercise. Rather a specific minimum set of observation, communication, motor, intellectual/conceptual, integrative and quantitative abilities, behavioral and social attributes and ethical and legal standards are needed to be a successful intern, resident or fellow. To be successful, one must progress with increasing independence throughout the program and by the time of program completion must be capable of competent and independent practice in that field.

Essential abilities and characteristics required for the completion of the training program consist of certain minimum physical and cognitive abilities and sufficient mental and emotional stability to complete the entire training program. Trainees must possess all of the requirements defined as technical standards listed in the six categories below, which in conjunction with individual program qualification criteria constitute the training program. Although these standards serve to delineate the necessary physical and mental abilities of all candidates, they are not intended to deter any candidate for whom reasonable accommodation will allow the fulfillment of the complete training program. Candidates with questions regarding technical standards are encouraged to contact Dr George Jackson/Dr. Carol Epling in Employee/Occupational Health and Wellness immediately to begin to address what types of reasonable accommodations may be considered for development to achieve these standards. Candidates with questions about Duke's reasonable accommodation process may contact Barbara Briner, Coordinator, Employment and Public Reasonable Accommodations with the Disability Management System at 919-684-8247.

Individual programs may require more stringent or more extensive abilities as appropriate to the requirements for training in that specialty and in certain specialties one or more of these technical standards may be more or less essential.

Candidates are encouraged to contact individual Duke Programs in which they are interested to see if additional expectations apply.

Programs that do not oversee all of the services required by their own discipline must work closely with other program directors with authority over services on which their trainees will be required to rotate. This is necessary in order to obtain copies of their most recent technical standards and ensure trainees meet technical standards in all areas required for completion of their program.

B. TECHNICAL STANDARDS

I. Observation:

- a. Observe materials presented in the learning environment including, but not limited to, audiovisual presentations, written documents, tissues and gross organs in the normal and pathologic state and diagnostic images.
- b. Accurately and completely observe patients both at a distance and directly and assess findings.
- c. Obtain a medical history and perform a complete physical examination in order to integrate findings based on these observations and to develop an appropriate diagnostic and treatment plan.

- II. Communication:
 - a. Communicate effectively, efficiently, accurately, respectfully and sensitively with patients, their families and members of the health care team.
 - b. Perceive non-verbal communications, including facial expression, body language and affect.
 - c. Respond appropriately to emotions communicated verbally and none verbally.
 - d. Synthesize accurately and quickly large volumes of medical information from different types of written forms and formats, electronic medical records, both typed and hand written, that constitutes medical history. Record information accurately and clearly and communicate effectively in English with other health care professionals in a variety of patient settings including a variety of hand written and computerized record systems.
- III. Motor Function:
 - a. Elicit information from patients and perform physical examinations and diagnostic maneuvers, at a minimum via palpitation, auscultation, and percussion.
 - b. Carry out diagnostic maneuvers required by the specialty (e.g. positioning patients, coordinating gross and fine motor movements).
 - c. Respond to emergency situations in a timely manner and provide general and emergency care necessitating the coordination of gross and fine motor movements, equilibrium and sensation.
 - d. Adhere to universal precaution measures and meet safety standards applicable to inpatient and outpatient settings and other clinical activities.
 - e. Manipulate equipment and instruments to perform basic laboratory tests and procedures as required to attain residency goals (e.g. stethoscope, central site sets, ultrasound etc.).
- IV. Intellectual/Conceptual, Integrative, & Quantitative Abilities:
 - a. Perform calculations necessary to solve quantitative problems as required by patient care and testing needs.
 - b. Collect, organize, prioritize, analyze, synthesize and assimilate large amounts of technically detailed and complex information in a timely fashion and with progressive independence. This information will be presented in a variety of educational and clinical settings including lectures, small group discussions and individual clinical settings.
 - c. Analyze, integrate, and apply this information for problem solving and decision-making in an appropriate and timely manner for the clinical situation.
 - d. Comprehend and learn factual knowledge from readings and didactic presentations.
 - e. Apply knowledge and reasoning to solve problems as outlined by the curriculum.
 - f. Recognize, comprehend and draw conclusions about three dimensional spatial relationships and logical, sequential relationships among events.
 - g. Formulate and test hypotheses that enable effective and timely problem solving in diagnosis and treatment of patients in a variety of clinical modalities.
 - h. Develop habits for lifelong learning.
- V. Behavioral and Social Attributes:
 - a. Possess and demonstrate the maturity and emotional stability required for full use of intellectual skill, exercise good judgment, and have the ability to complete all responsibilities attendant to the diagnosis and care of patients.
 - b. Develop a mature, sensitive and effective relationship with patients and colleagues.
 - c. Tolerate work hours consistent with ACGME duty standards, function effectively under stress, and display flexibility and adaptability to changing environments during training and patient care including call, sustained work up to 30 hours at a stretch and up to 80 hours/week of clinical work or the specialty-specific duty hours.
 - d. Function in the face of uncertainty and ambiguity in rapidly changing circumstances.

- e. Behave in an ethical and moral manner consistent with professional values and standards.
- f. Exhibit sufficient interpersonal skills, knowledge, and attitudes to interact positively and sensitively with people from all parts of society, racial and ethnic backgrounds, and belief systems.
- g. Cooperate with others and work collaboratively as a team member.
- h. Demonstrate insight into personal strengths and weaknesses.
- i. Seek the advice of others when appropriate.
- j. Be punctual, present at all assignments when expected or notify superiors.
- k. Complete work including documentation and dictations in a timely manner
- l. Acknowledge conflicts of interest, mistakes and adverse outcomes and cooperate in their resolution.
- m. Remain awake and alert for assigned duty periods and teaching activities within duty hours and abide by rules and policies.

VI. ETHICAL AND LEGAL STANDARDS:

- a. Candidates must meet the legal standards to be licensed to practice medicine in the State of North Carolina. As such, candidates for admission must acknowledge and provide written explanation of any felony offense or disciplinary action taken against them prior to matriculation in any Duke GME Program.
 - Should the intern, resident or fellow be convicted of any felony offense, or any offense that puts medical licensure at risk, while in a GME Program, he/she agrees to immediately notify the Program Director and the GME Office as to the nature of the conviction.
 - Failure to disclose prior or new offenses can lead to disciplinary action that may include dismissal.

C. PROCESS

Program directors recognize their responsibilities to verify that at program completion, trainees are capable of competent and independent practice within the specialty or subspecialty. To do so, trainees will have to have demonstrated competencies that include knowledge, attitudes, and skills which equip them to function in a broad variety of clinical situations

Duke Graduate Medical Education has an institutional commitment to provide equal opportunities for qualified interns, residents and fellows with disabilities who apply for admission to any of the Duke GME programs. Duke GME is a leader in diversity and individual rights, with a strong commitment to full compliance with state and federal laws and regulations (including the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990.)

A “qualified person with a disability” is an individual with a disability who meets the academic and technical standards requisite to admission or participation in GME programs, with or without reasonable accommodations.

Admitted candidates with disabilities are reviewed individually, on a case-by-case basis, with a complete and careful consideration of all the skills, attitudes and attributes of each candidate to determine whether they can satisfy the standards with or without any reasonable accommodations.

An accommodation is not reasonable if it poses a direct threat to the health or safety of patients, self and/or others, if making it requires a substantial modification in an essential element of the program, if it lowers GME program standards, or possesses an undue administrative or financial burden. As noted above, except in rare circumstances, the use by the candidate of a third party (e.g., an intermediary) to perform any of the functions described in the Technical Standards set forth above would constitute an unacceptable substantial modification.

Admission to any of Duke's GME programs is conditional on the candidate's having the willingness and ability to satisfy the technical standards, with or without reasonable accommodation.

Admitted candidates who have a disability and need accommodations should initiate discussions with the Program Director as soon as the offer of admission is received and accepted. It is the responsibility of a candidate with a disability to provide sufficiently current information documenting the general nature and extent of his/her disability, and the functional limitations proposed to be accommodated. GME reserves the right to request new or additional information.

Evaluating and facilitating effort by the candidate, are the Duke Program Director, Employee/Occupational Health (EOHW) and Wellness, and the Disability Management System. Should a candidate have or develop a condition that would place patients, the candidate or others at risk or that may affect his/her need for accommodation, an evaluation with EOHW may be necessary. As in initial assessments, a complete and careful reconsideration of all the skills, attitudes and attributes of each candidate will be performed.

Duke GME Programs, program directors and selection committees are responsible for adhering to these technical standards and process during the selection of interns, residents and fellows. When an individual enters a Graduate Medical Education Training program it is expected that all necessary accommodations will be detailed and agreed to by the program *before* (s) he begins training.

If you have any questions about this document or whether you meet the technical standards described above, please contact [Dr. George Jackson](#) or [Dr. Carol Epling](#) and [Occupational and Employee Health](#) or [Duke GME](#).

Stipends

2019 - 2020

Stipend Level & Amount

1	\$56,880
2	\$59,184
3	\$61,464
4	\$63,984
5	\$66,456
6	\$69,084
7	\$71,544
8	\$74,424
9	\$76,644
10	\$79,284
11	\$82,020
12	\$84,852

2018 - 2019

Stipend Level & Amount

1	\$55,764
2	\$58,020
3	\$60,264
4	\$62,724
5	\$65,148
6	\$67,728
7	\$70,140
8	\$72,960
9	\$75,144
10	\$77,724
11	\$80,412
12	\$83,184

Graduate Medical Education Agreement of Appointment

DUKE UNIVERSITY HEALTH SYSTEM, INC.

d/b/a DUKE UNIVERSITY HOSPITAL 2019- 2020

This agreement of appointment (the "Agreement") made this ___ day of ___ by and between Duke University Health System, Inc. ("DUHS"), for and on behalf of Duke University Hospital (the "Hospital"), and _____ ("Trainee"), sets forth the terms and conditions of the Trainee's appointment as Associate Medical Staff of the Hospital.

The purpose and intention of this Agreement is to assist Trainee, a physician-in-training, in the pursuit of his or her postgraduate studies. In consideration of the mutual promises contained herein, the Hospital and Trainee each agree as follows:

1. Terms of Appointment.

- 1.1. Commencement Date for DUHS in conjunction with the Department of ___ in the Program of ___ from to ___ (term may not exceed next fiscal year).
- 1.2. As a condition precedent to appointment, Trainee must provide all of the required credentialing documentation to the Office of Graduate Medical Education prior to commencement date. If Trainee fails to meet one or more of these requirements, DUHS may, in its discretion, revoke the Agreement, suspend the Agreement, alter or extend the Agreement's Term, or allow Trainee to commence work subject to conditions DUHS may establish to comply with governing laws and protect patient safety and the public interest. The required credentialing documentation includes but is not necessarily limited to the following:
 - 1.2.1. A completed current Application for Membership to the Associate Medical Staff of Duke University Hospital approved by Risk Management and Legal Counsel;
 - 1.2.2. Documentation of passage of appropriate licensing examinations as per Institutional Policy (See USMLE Policy at www.gme.duke.edu);
 - 1.2.3. Documentation of employment eligibility (Trainee must meet Federal requirements per Form I-9);
 - 1.2.4. If Trainee is an international medical school graduate, a current and valid ECFMG certificate;
 - 1.2.5. A valid license to practice medicine that complies with the applicable provisions of the laws pertaining to licensure in the state of North Carolina or any other state in which the Program may assign Trainee for clinical duties pursuant to Trainee's Program;
 - 1.2.6. Life support certification(s) ACLS, BCLS, and PALS as prescribed by Program, and/or the Hospital;
 - 1.2.7. This signed Agreement; provided, however, that the parties acknowledge and agree that this Agreement will not be effective, and Trainee's employment will not commence, until all conditions precedent to appointment (including but not limited to the satisfactory completion of the credentialing process) have been satisfied;

- 1.2.8. Documentation showing confirmation of timely registration for National Provider Identifier (NPI) number and enrollment as an Ordering, Prescribing, or Referring (OPR) provider.
- 1.2.9. Submission of a health examination and supplementary test(s), which includes tests for drug and/or alcohol abuse, and receive the required immunizations in compliance with DUHS policy and all applicable federal, state, and local laws and regulations. It must be determined that Trainee is in sufficient physical and mental condition to perform the essential functions of appointment. The results of all examinations shall be provided only to Employee Occupational Health and Wellness;
- 1.2.10. Further information that DUHS may request in connection with the Trainee's credentials, not limited to, Criminal Background Check and clearance from the National Practitioner Data Bank; and
- 1.2.11. Any document not printed in English must be accompanied by an acceptable original English translation performed by a qualified translator. Each translation must be accompanied by an affidavit of accuracy acceptable to DUHS.

2. Trainee Responsibilities. Trainee must meet the qualifications for trainee eligibility as outlined in the Accreditation Council for Graduate Medical Education (ACGME) Institutional Requirements (www.acgme.org), or as set forth in such other applicable accreditation requirements, or requirements the Hospital promulgates and follows as applicable to non-ACGME accredited programs, that may be in effect from time to time. In providing services and in participation in the activities of the Program, Trainee agrees to do the following:

- 2.1. Obey and adhere to the Medical Staff Bylaws, the policies and practices of the Institution and Program (accessible at <https://gme.duke.edu/policies>), the policies and requirements of all of the facilities to which Trainee rotates, the standards of all accrediting certifying or licensing organization, and all applicable state, federal and local laws;
- 2.2. Participate fully in the educational, research and scholarly activities as assigned by the Institution and Program (and/or as necessary for the completion of applicable graduate requirements), attend all required educational conferences, assume responsibility for teaching and supervising other trainees and students, and participate in assigned DUHS, Hospital, Medical Staff committee activities;
- 2.3. Use his or her best efforts to provide safe, effective and compassionate patient care, and present at all times a courteous and respectful attitude toward all patients, colleagues, employees, visitors at DUHS and other facilities/rotation sites to which Trainee is assigned. This provision includes compliance with the dress code applicable to DUHS trainees;
- 2.4. Satisfactorily fulfill the educational requirements of the Program in a timely manner;
- 2.5. Provide clinical services:
 - 2.5.1. As and when assigned
 - 2.5.2. Commensurate with his/her level of advancement and responsibilities;
 - 2.5.3. Under appropriate supervision;
 - 2.5.4. At sites specifically approved by the Program and Office of Graduate Medical Education; and

- 2.5.5. Under circumstances and at locations covered by the Hospital's professional liability insurance maintained for Trainee in accordance with Section 5.4 below.
- 2.6. To the satisfaction of the Program Director, demonstrate competency in Patient Care, Medical Knowledge, Interpersonal and Communication Skills, Practice Based Learning and Improvement, Professionalism, and Systems Based Practice (and reasonable progress in ACGME Milestones for specialties for which they are required, as determined by the institution in its sole discretion) for Trainee's level of training;
- 2.7. Cooperate fully as follows:
- 2.7.1. Coordinate and complete the required submissions and activities including the legible and timely completion of patient medical records, charts, reports, statistical operative and procedure logs and/or other clinical documentation required by the ACGME, Hospital, DUHS, Department and Program; and
- 2.7.2. Immediately report to the Office of Graduate Medical Education, any investigation or correspondence regarding issues that may impact state licensure.
- 2.7.3. Cooperate with the North Carolina Medical Board or any other state medical board with respect to any investigation that may impact state licensure.
- 2.8. Return at the time of the expiration or termination of the Agreement, all Hospital property, including but not limited to books, equipment, and pager; complete all necessary records; and settle all professional and financial obligations;
- 2.9. Comply with and complete all required Hospital, Department and Program surveys, reviews, evaluations, quality assurance and credentialing activities;
- 2.10. Report immediately: a) to DUHS Risk Management or the Office of General Counsel any inquiry by any private or governmental attorney or investigator (including, without limitation, inquiries related to services provided at the Veteran's Administration, or any other clinic or facility), or b) to the Hospital's Office of Public Affairs any inquiry by any member of the press. Trainee understands that the Hospital encourages Trainee's full cooperation with any governmental investigation or inquiry. Trainee agrees not to communicate with any inquiring private attorney or any members of the press except merely to refer such private attorneys or members of the press to the Office of University Counsel and to refer the press to the Public Relations Office;
- 2.11. Comply with obligations set forth in Section 5.4 below;
- 2.12. Cooperate fully with Hospital administration, including but not limited to the departments of Nursing, Professional Services, Financial Services, Social Services, and other ancillary services departments in connection with the evaluation of appropriate discharge and post-hospital care for hospital patients;
- 2.13. Cooperate fully with Hospital institutional policies prohibiting discrimination and harassment.
<https://hr.duke.edu/policies/diversity/harassment-discrimination>;
- 2.14. Permit the Hospital to obtain from and provide to all proper parties any and all information as required or authorized by law or by any accreditation body, and the Trainee covenants to hold harmless the Hospital, its officers, directors, or other personnel for good faith compliance with such requests for information. This covenant shall survive termination or expiration of this Agreement;

- 2.15. Maintain required immunizations consistent with DUHS policy and all applicable federal, state, and local laws and regulations; and
- 2.16. Timely and successfully complete GME Institutional Orientation.

3. Institutional Responsibilities. The Hospital has the following obligations:

- 3.1. To provide, within available resources, an educational training program that meets all standards established by ACGME or other accrediting entity, if applicable;
- 3.2. To provide, within available resources, Trainee with adequate and appropriate support staff and facilities in accordance with federal, state, local and ACGME requirements;
- 3.3. To maintain an environment conducive to the health and well-being of Trainee;
- 3.4. To provide adequate and appropriate patient and information support services;
- 3.5. To comply with its policies and procedures;
- 3.6. To provide a fair and consistent method for review of Trainee's concerns and/or grievances, as well as due process, without the fear of reprisal;
- 3.7. Upon satisfactory completion of the Program and its requirements as well as Hospital's Trainee responsibilities and with termination of GME Trainee status, to furnish to Trainee a Certificate(s) of Completion of the Program(s); and
- 3.8. To allow access to information related to eligibility for specialty board examinations, available at <https://www.abms.org/media/194925/abms-guide-to-medical-specialties-2019.pdf>.

4. Clinical and Education Work (“Duty Hours”).

- 4.1. Trainee shall perform his/her duties under this Agreement during such hours as the Program Director may direct in accordance with the Clinical and Educational Work (“Duty Hour”) Policy, available at www.gme.duke.edu. Hours dedicated to clinical experience and education, although subject to modification and variation depending upon the clinical area to which Trainee is assigned and/or exigent circumstances, shall be in accordance with federal, state, institutional, ACGME or other applicable accreditation requirements.
- 4.2. If a scheduled duty assignment is inconsistent with this Agreement or the Clinical and Educational Work Policy, Trainee shall bring the inconsistency first to the attention of the Program Director for reconciliation or cure. If the Program Director does not reconcile or cure the inconsistency, it shall be the obligation of Trainee to notify the Office of Graduate Medical Education who shall inform the Director of Graduate Medical Education and the GME Representative who shall take the necessary steps to reconcile or cure the raised inconsistency.
- 4.3. Trainee shall report hours spent on clinical experience and education hours in a timely and accurate manner to the Office of Graduate Medical Education.
- 4.4. Moonlighting. Employment as a physician in a professional capacity outside of what is outlined in this Agreement, whether temporary special medical activity (“TSM”) or external moonlighting, must be approved in writing, in advance, by the Departmental Chair, Program Director and Director of Graduate Medical Education (or designee). Even if approved, professional and general liability insurance as outlined in Section 5.4 is not provided to Trainee engaged in external moonlighting. Trainee acknowledges he or she has the responsibility to obtain insurance for such engagement. TSM and external

moonlighting must be included and reported as part of Trainee's hours spent on clinical experience and education. Trainee shall not be required to engage in any outside work.

- 4.5. Non-physician work or pursuits for monetary gain unrelated to Trainee's status as a physician that do not interfere with Trainee's obligations as in Section 2, are permissible, subject to the provisions in the Duke guidance for reporting conflict of commitment statement (found at <https://hr.duke.edu/policies/expectations/conflict-interest>), and must be communicated to and approved by the Program Director in writing.

5. Financial Support and Benefits. The Hospital shall provide the Trainee with financial support and benefits in the following areas as described below.

- 5.1. Stipend: payable monthly. Financial support (stipend and fringe benefits) at a uniform level for all trainees in each year of graduate medical education training. Except as permitted in Sections 4.4 and 4.5, this shall be the Trainee's sole source of compensation. Except for approved and authorized extracurricular activities, the Trainee shall not accept any other fee of any kind for services.
- 5.2. Services: Uniforms, parking, access to food services 24 hours a day, and sleep/rest facilities available for Trainees on-call in the Hospital.
- 5.3. Vacation and leave time consistent with the policies of the Program, Department, Hospital, DUHS, and state and federal laws.
 - 5.3.1. Leaves of Absence. The Trainee expressly acknowledges that additional training after a leave of absence may be needed for successful completion of Program Requirements and/or for Board certification requirements. The amount of sick leave, leave of absence, or disability time that will necessitate prolongation of the training time for the Trainee shall be determined by the Program Director and the requirements of the pertinent Residency Committee and/or certifying Board.
- 5.4. Professional Liability Insurance. The Hospital shall provide the Trainee with professional liability insurance coverage while the Trainee is acting within the scope of his/her assigned program activities, and tail coverage (detailed information available from Risk Management). In connection with the professional liability coverage provided by the Hospital:
 - 5.4.1. The Trainee agrees to cooperate fully in any investigations, discovery related to litigation, and defense that may arise. The Trainee's failure to cooperate may result in revocation of insurance coverage;
 - 5.4.2. If the Trainee receives, or anyone with whom the Trainee works receives on his/her behalf, any summons, complaint, subpoena, or court paper of any kind relating to activities in connection with this Agreement or the Trainee's activities at the Hospitals, the Trainee agrees to immediately report this receipt to Risk Management and submit the document received to that office; and
 - 5.4.3. The Trainee agrees to cooperate fully with DUHS Administration and Risk Management in connection with the following: (a) evaluation of patient care; (b) review of an incident or claim; or (c) preparation for litigation, whether or not the Trainee is a named party to that litigation.
- 5.5. Other Additional Benefits and Resources. (see GME website www.gme.duke.edu):
 - 5.5.1. Health, Dental, and Vision Benefits. Hospital and health insurance benefits are offered to Trainees and their eligible dependents with available coverage from the

first recognized day of training. It is the Trainee's obligation to select and enroll in the benefit program(s) he/she desires;

5.5.2. Life Insurance;

5.5.3. Long Term Disability Insurance;

5.5.4. Workers' Compensation;

5.5.5. Confidential support services including confidential counseling, medical, and psychological support services; and

5.5.6. Physician Impairment and Substance Abuse. The Hospital agrees to provide the Trainee with information regarding physician impairment, including substance abuse, and shall inform the Trainee of Hospital policies for handling physician impairment, including impairment related to substance abuse.

5.6. Discontinuation of Benefits. The Hospital reserves the right to modify or discontinue the plan of benefits set forth herein at any time. Any such change cannot be made without first advising the affected insured.

6. Reappointment & Promotion to Subsequent PGY Level. The duration of this Agreement is for the academic year specified in the heading of this agreement, not to exceed the equivalent fiscal year. Re-appointment and/or promotion to the next level of training is not automatic. It is conditional upon; (a) satisfactory completion of all training components and satisfactory academic progress as mandated by the Program and the Institution, (b) the availability of a position, (c) full compliance with the terms of this Agreement, (d) the continuation of the Hospital's and Program's accreditation by the ACGME if applicable, (e) the Hospital's financial ability, (f) furtherance of Hospital objectives, and (g) satisfactory performance evaluations and documentation of passage of appropriate licensing examinations. The Program maintains a confidential record of the evaluations in accord with North Carolina law pertinent to peer review (NCGS 131E-95).

6.1. A decision not to re-appoint or promote Trainee is an adverse corrective action under the Corrective Action and Hearing Procedures for Associate Medical Staff of Duke University Hospital ("CAHP"), available at www.gme.duke.edu. Trainee's rights as to challenging the decision are set forth in CAHP.

6.2. If non-reappointment is based on reasons other than the Trainee's performance, the Closures and Reductions policy, available at www.gme.duke.edu, describes the Hospital obligations to the Trainee.

7. Grievance Procedures. Trainee is encouraged, through the Grievance Process for Trainees, to seek resolution of grievances relating to his/her appointment or responsibilities, including any difference between the Trainee and the Hospital and/or Program and/or any representative thereof, with respect to the interpretation of, application of, or compliance with the provisions of this Agreement. The policy is available at www.gme.duke.edu.

8. Corrective Action, Dismissal and Suspension. During the term of this Agreement, the Trainee's appointment is conditional upon Trainee's satisfactory performance of all Program requirements. Pursuant to CAHP, if Trainee's actions, conduct, or performance, professional, academic, or otherwise, are deemed unsatisfactory, corrective action, whether routine or

adverse, including dismissal, may be taken, or suspension may be imposed. Trainee may use processes set forth in CAHP, available at www.gme.duke.edu, to challenge such action.

- 9. Reporting Obligations.** Nothing herein shall affect or interfere with any right or obligation of Duke University, the Program, any Hospital or the Associate to make any report pursuant to state or federal law.

10. Miscellaneous.

- 10.1. Taxes. The Hospital shall deduct appropriate items including FICA (Social Security) and applicable federal, state, and city withholding taxes. To the extent the Trainee participates in any approved out-of-state or international rotations or other activities, Trainee hereby acknowledges that such participation may result in additional tax liability for Trainee. The Hospital will work with the Trainee to coordinate the withholding and/or payment of such amounts in accordance with the policies, protocols and procedures of DUHS.
- 10.2. Overpayments and Restitution. In the event that any amounts are paid to Trainee that are in excess of the compensation or other amounts due and payable to Trainee under this Agreement, Trainee will immediately report such overpayments to the Office of Graduate Medical Education and will promptly refund such overpayments to the Hospital, as directed by the Office of Graduate Medical Education.
- 10.3. Restrictive Covenants. The Hospital and its Graduate Medical Education Programs will not require trainees to sign a noncompetition guarantee.
- 10.4. Severability. In the event any provision of this Agreement is held to be unenforceable for any reason, that unenforceability shall not affect the remainder of this Agreement, which shall remain in full force and effect and shall be enforceable in accordance with its terms.
- 11.** Trainee by signing this Agreement, agrees to protect the confidentiality, privacy and security of patient, student, personnel, business, peer review, and other confidential, sensitive electronic or proprietary information (collectively, "Confidential Information") of Duke University, DUHS and the Private Diagnostic Clinic (collectively, "Duke") from any source and in any form (talking, paper, electronic). As a condition of this Agreement, Trainee shall execute the accompanying Duke Health Confidentiality Agreement.
- 12.** I understand that my failure to comply with this Agreement may result in the termination of my relationship with Duke and/or civil or criminal legal penalties. By signing this, I agree that I have read, understand and will comply with the terms of the accompanying Duke Health Confidentiality Agreement in addition to all the other terms of this Agreement.
- 13.** I understand that my Program may require that I participate in providing clinical care at Duke Regional Hospital, Duke Raleigh Hospital, and other Health System hospitals, facilities and/or programs. This statement is to authorize Duke University and DUHS to provide any information including, but not limited to, information from my personnel file as maintained by the Office of Graduate Medical Education at the Hospital, insurance and claims history information, and any other information relating to my service as a graduate medical trainee at the Hospital to these facilities.

- 14. Entire Agreement.** Unless otherwise expressly set forth herein, this Agreement embodies the complete agreement and understanding between the Parties hereto with respect to the subject matter hereof and supersedes and preempts any prior understanding of the Parties, written or oral, which may have been related to the subject matter hereof in any way.
- 15. Applicable Law.** This Agreement shall be construed in accordance with and governed by the laws of the State of North Carolina.
- 16. Forum.** Both Trainee and DUHS hereby irrevocably and unconditionally agree that any legal or equitable action or dispute arising from, in connection with, or relating to this Agreement and/or DUHS's employment of Trainee, which is or may be within the jurisdiction of federal courts in the State of North Carolina, must be commenced in said federal courts. Nothing in this provision is intended to discourage or interfere with the rights or obligations of Trainee to file administrative claims or charges with government agencies prior to any related action being initiated in the courts.

ACCEPTED AND AGREED:

Jane Smith Doe
Trainee

Jason Smith, M.D.
Program Training Director

Catherine M. Kuhn, M.D.
Director, Graduate Medical Education

GME Benefits

Medical, Dental, & Vision Benefits at Duke

Medical Insurance

All House Staff Trainees receive a discounted rate for medical insurance. Each medical care plan covers both Pharmacy and Mental Health benefits. Please refer to the Medical Care Plans Comparison Chart. All of our medical plans will cover pre-existing conditions for covered services.

Each employee's needs are different — that's why Duke offers four different medical plans to meet the needs of you and your family:

Duke Select HMO
Duke Basic HMO
Blue Care HMO
Duke Options PPO

Dental Insurance

Duke offers employees a choice of Dental Care Plans, depending on the level of coverage faculty, staff and their family members may need. Both plans cover preventive, basic, and major services, but they differ in how they pay for covered services. Under each plan, participants can visit any licensed dentist. Please refer to the Dental Plan Comparison Chart and the Dental Plan Premiums for further details.

Vision Insurance

While Duke's medical plans provide coverage for annual eye exams, Duke also offers a nationwide vision care plan to manage the cost of eyeglasses and contact lenses, as well as eye examinations. The vision plan, administered by United Healthcare Vision, allows you to pay for vision benefits on a pre-tax basis. You do not need to be enrolled in any of Duke's medical plans to participate in the vision plan.

Need to Find a Provider?

An online directory of participating medical providers for all medical plans is available [here](#).

Reimbursement Accounts

Take Advantage of Tax Savings with Reimbursements Accounts

Reimbursement accounts help you take advantage of tax savings on eligible health care and dependent care expenses. Duke offers you two reimbursement accounts: a Health Care Reimbursement Account (for your eligible health care expenses not covered by insurance) and a Dependent Care Reimbursement Account (for reimbursement of day care expenses for eligible dependents).

Additional Housestaff Benefits – Paid 100% by Duke University Hospital

Long Term Disability Insurance

Provided by Marsh and McLennan Agency formerly known as the Benefit Planning Group
Plan converts to an individual policy upon graduation
Disability Insurance for GME, additional details (PDF)

Life Insurance

Provided by Principal Financial Group
\$100,000 life insurance policy

Parking

On campus parking provide for each resident and fellow at no cost

On Call Meals

\$8.25 per meal, 7:00 p.m. - 5:30 a.m.
Starbucks included in program

Uniforms

Lab coats provided annually

Program Benefits

Meetings

The cardiothoracic residents will be sponsored to attend one Academic Meeting (AATS, STS, ACS, AHA, WTSA or ACC) annually at the expense of the Division and one course.

The academic meeting schedule is created in July. No more than 3 CT residents from Duke Hospital rotations (including only 1 CT2 resident) may attend a given meeting.

Except when specified, travel for meetings should include a Saturday evening, in order to obtain the most reasonable airline fares.

Vacations

Each resident is allotted two (2) one-week vacations during the academic year, the first week July-December, and the second week Jan-June. The week must be requested in advance to avoid conflicts with scientific meetings and other vacations.

Each "one-week" vacation actually extends from Saturday morning after clinical responsibilities are met and ends the following Monday morning at 6 AM.

Vacation schedules must be approved in advance by Dr. D'Amico.

FMLA / Disability Leave

The Family and Medical Leave Act (FMLA) entitles a covered employee to take up to 84 days of unpaid leave in a 12-month period for the birth or adoption of a child, or the "serious health condition" of the employee or the employee's child, spouse, or parent. If at all possible, the resident must make the request for FMLA and all associated paperwork prior to the precipitating event. The resident must inform the Program Director and the Program Coordinator at the earliest awareness of such a need. For FMLA approval, the resident should seek consultation with the EOHS, or ask his/her treating clinician to send documentation of an FMLA qualifying condition and recommendation for time away to the EOHS. The EOHS will then communicate the approval of the leave to the program director. FMLA can be taken in a full block or in smaller increments as determined by the clinician who provides care in conjunction with the EOHS or his/her designee.

Call Rooms

Call rooms are located on 3200 and DMP 7W. Showers are located in the DMP 7W call suite.

HOUSE STAFF HEALTH CARE, DENTAL & VISION PREMIUMS

EFFECTIVE JANUARY 1, 2019

DUKE SELECT (HMO MODEL) PREMIUMS					
	INDIVIDUAL	EMPLOYEE/CHILD	EMPLOYEE/CHILDREN	EMPLOYEE/SPOUSE	FAMILY
TOTAL PREMIUM	\$457.00	\$681.00	\$851.00	\$1,071.00	\$1,252.00
DUKE CONTRIBUTION	\$457.00	\$571.00	\$655.00	\$762.00	\$852.00
EMPLOYEE PREMIUM	\$0.00	\$110.00	\$196.00	\$309.00	\$400.00

DUKE BASIC (HMO MODEL) PREMIUMS					
	INDIVIDUAL	EMPLOYEE/CHILD	EMPLOYEE/CHILDREN	EMPLOYEE/SPOUSE	FAMILY
TOTAL PREMIUM	\$387.00	\$570.00	\$710.00	\$894.00	\$1,033.00
DUKE CONTRIBUTION	\$387.00	\$543.00	\$624.00	\$726.00	\$810.00
EMPLOYEE PREMIUM	\$0.00	\$27.00	\$86.00	\$168.00	\$223.00

BLUE CARE (HMO MODEL) PREMIUMS					
	INDIVIDUAL	EMPLOYEE/CHILD	EMPLOYEE/CHILDREN	EMPLOYEE/SPOUSE	FAMILY
TOTAL PREMIUM	\$907.00	\$1,205.00	\$1,369.00	\$1,685.00	\$2,018.00
DUKE CONTRIBUTION	\$829.00	\$977.00	\$1,000.00	\$1,216.00	\$1,383.00
EMPLOYEE PREMIUM	\$78.00	\$228.00	\$369.00	\$469.00	\$635.00

DUKE OPTIONS (PPO MODEL) PREMIUMS					
	INDIVIDUAL	EMPLOYEE/CHILD	EMPLOYEE/CHILDREN	EMPLOYEE/SPOUSE	FAMILY
TOTAL PREMIUM	\$861.00	\$1,163.00	\$1,366.00	\$1,678.00	\$1,965.00
DUKE CONTRIBUTION	\$780.00	\$942.00	\$1,045.00	\$1,195.00	\$1,340.00
EMPLOYEE PREMIUM	\$72.00	\$221.00	\$323.00	\$482.00	\$625.00

DENTAL PREMIUMS*					
	INDIVIDUAL	EMPLOYEE/CHILD	EMPLOYEE/CHILDREN	EMPLOYEE/SPOUSE	FAMILY
PPO PLAN PREMIUM	\$39.21	\$76.20		\$78.47	\$118.79
PLAN A PREMIUM	\$44.13	\$85.73		\$88.29	\$133.67
PLAN B PREMIUM	\$12.16	\$24.82		\$24.37	\$45.24

VISION PREMIUMS*					
	INDIVIDUAL	EMPLOYEE/CHILD	EMPLOYEE/CHILDREN	EMPLOYEE/SPOUSE	FAMILY
PLAN PREMIUM	\$9.66	\$18.49	\$19.46	\$18.50	\$29.97

*Same as Non-House Staff Rates