

# STATS 2020 commemorative edition



Just like moons and like suns, With the certainty of tides, Just like hopes springing high, Still I'll rise.

*— Maya Angelou, "Still I Rise"* 

#### **WELCOME**

**2020.** When we rang in that new year, none of us could have imagined the worldwide medical menace that would turn our normal existence into a round-the-clock challenge across our tripartite mission.

In true Wake Forest Baptist Health manner, our system teams immediately responded. We quickly modified our clinical protocols for COVID-19 patients, streamlined our supply chain to ensure that there was adequate personal protective equipment for health care providers and created new visitor protocols and limited access to ensure the safety of all. We delayed surgeries and outpatient visits that could be done so safely. We set up COVID-19 testing centers and moved our offices to our homes and meetings to virtual places called Teams, Zoom and WebEx. We shifted classes for our medical students to online. Research that could be was delayed, and masks, social distancing and frequent hand-washing became our mantra.

In addition to adapting and managing our part of the worldwide pandemic in the Triad and beyond, there were other notable achievements that we accomplished together. And many were firsts!

We delivered several hundred babies, we discharged 2,000 COVID-19 patients to their homes and families, 100% of our 143 medical students matched for their residencies and we received the highest amount of research funding in our history at \$300 million.

We also took an important step in our goal to better serve and reflect our community by establishing our Racial Equity Task Force to guide us in becoming more diverse, inclusive and equitable.

In another major milestone, in October 2020 we made a historic, forward-facing decision and combined with an exciting new partner as the academic core of the new Atrium Health Enterprise. This combination enables us to make long-needed upgrades to our health care system, create strong service line networks across multiple locations, grow our research and clinical trials outreach, enhance education offerings and bring unmatched health care options to all in the communities throughout our combined geography.

We have met the challenge. We have remained resilient. We have endured. We have been brave.

The best is yet to come!

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Julie Ann Freischlag, MD, FACS, FRCSEd(Hon), DFSVS Chief Executive Officer, Wake Forest Baptist Health Dean, Wake Forest School of Medicine Chief Academic Officer, Atrium Health Enterprise



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# WE CARE

about our patients by offering a full continuum of care in every department.

# **ANESTHESIOLOGY**

The Department of Anesthesiology delivers exemplary, cost-effective patient care. We employ vigilant physicians who accept the clinical and academic challenges of providing compassionate treatment for patients while teaching students of varied skill and ability.

**Clinical Focus:** Our anesthesia care team practices preoperative optimization, surgical/procedural anesthesia, postoperative care in the perioperative surgical home, pain medicine and critical care medicine.

**Research Focus:** Our research efforts include the Pain Mechanisms Laboratory, clinical research in chronic pain medicine, acute pain and regional anesthesia, "big data" approaches to perioperative outcomes research, clinical pharmacology, computer vision and machine learning, gender differences in heart failure, postoperative hemodynamic and respiratory monitoring, and continued participation in clinical data registries. We continually rank in the top 25 nationally in National Institutes of Health (NIH) funding.



# **FELLOWSHIPS:**

Obstetric Anesthesiology, Regional Anesthesia and Acute Pain Management, Cardiothoracic Anesthesiology, Pain Medicine, Neuro Anesthesia



- Launched Obstetrics Anesthesiology services in The Birth Center
- Integrated and expanded ICU coverage at High Point Medical Center
- Increased intramural and extramural funded research
- Participated in global health outreach efforts
- Received zero citations by Anesthesiology Residency Review Committee

# **ACUTE CARE SURGERY**

Wake Forest Baptist Health is the only verified Level 1 Trauma and Burn Center for adult and pediatric patients in the Triad and western North Carolina. As the region's emergency and trauma resource center, our services span from prevention to rehabilitation.

• Our highly skilled, specialty-trained, multidisciplinary team is led by nine adult acute care surgeons, three burn surgeons and five pediatric surgeons in tandem with physician assistants, nurse practitioners, experienced emergency nurses, sexual assault nurse examiners, forensic nurse examiners, social workers, case managers and other specially trained staff.

Our primary goal is to provide the best care possible to our adult and pediatric patients who are critically ill with complex trauma, burn or surgical emergencies.



# **ACUTE CARE SURGERY**

#### Trauma Center

The Level 1 adult and pediatric trauma centers at Wake Forest Baptist are verified by the American College of Surgeons-Committee on Trauma and designated by the state. More than 4,300 injured adults and children are cared for annually at Wake Forest Baptist.

- Our trauma teams are led by fellowship-trained acute care and pediatric surgeons. Comprehensive care provided includes all medical subspecialties and specialized services in neurosurgery, vascular surgery, urology and orthopaedics that are available to all trauma patients.
- Educational and outreach activities include firearms injury prevention, geriatric fall prevention, bicycle safety and American College of Surgeons-sponsored courses such as Advanced Trauma Life Support, Trauma Exposures and Techniques, Trauma Nurse Core Curriculum and Pediatric Advanced Life Support.

In 2008, through a generous gift from Richard and Judy Childress, Wake Forest Baptist founded the Childress Institute for Pediatric Trauma. The Childress Institute discovers and shares best practices to prevent and treat severe injuries in children and funds research, education and advocacy to help improve the care and treatment of injured children across the nation.



# **ACUTE CARE SURGERY**

#### Burn Center

Wake Forest Baptist is verified by the American Burn Association, recognizing distinction in the care of adult and pediatric patients. We house one of only two verified burn centers in North Carolina. Our Burn Center cares for more than 500 adult and pediatric patients each year and includes:

- An eight-bed burn ICU
- A 16-bed acute care unit
- Two hydrotherapy areas
- A gym to assist with physical therapy and recovery

#### The center has:

- Three fellowship-trained burn surgeons who lead the unit
- A multidisciplinary team of direct caregivers that includes physician assistants, advanced practice providers, psychologists, nurses, pharmacists, nursing assistants, therapists, social workers and chaplains.



# **Emergency General Surgery**

Wake Forest Baptist is the region's resource for emergency general surgery and evaluates more than 2,400 patients each year. Our nine emergency general surgeons are fellowship-trained in acute care and manage patients with simple appendicitis as well as patients with complex medical and emergent surgery needs, using a collaborative, evidence-based approach to provide timely and comprehensive care.

From the common to the complicated, our emergency general surgery physicians are available to our region and referral community 24 hours a day, seven days a week.

# Surgical Critical Care

Surgical critical care is the section of acute care surgery that cares for patients with life-threatening surgical conditions. Our surgical critical care specialists manage the care of our patients in the trauma ICU and the surgical ICU. These surgeons have extensive training in a multitude of specialties, enabling us to provide comprehensive care to critically ill adult and pediatric patients across all surgical specialties.

Acute Care Surgery and Surgical Critical Care, Mastery in General Surgery



- Achieved TQIP high performer status in clinical outcomes
- Produced 10 peer-reviewed manuscripts and five book chapters
- Presented at 12 national meetings
- Faculty served in national leadership roles at the following organizations: American College of Surgeons, American College of Surgeons' Committee on Trauma, American Association for the Surgery of Trauma, Eastern Association for the Surgery of Trauma, American Burn Association, Coalition for National Trauma Research



This year, the COVID-19 pandemic brought the expertise of our infectious disease and multiple other specialists to the forefront.

**Clinical Focus:** In dealing with the COVID-19 pandemic, Wake Forest Baptist Health expanded or opened several respiratory symptom clinics and testing sites across the region, established a COVID-19 hotline to field patient questions, took proactive measures to help control the spread and created PUI/COVID-19 units to treat patients.

In addition to their work with COVID-19, our infectious disease specialists treat patients with diseases caused by viruses, bacteria, parasites and fungi. Patients are treated at a specialty clinic, one of the largest infectious disease clinics in the state. The clinic includes the Ryan White HIV Clinic, a service for adult patients who are HIV positive.

**Research Focus:** Wake Forest Baptist continues to lead the COVID-19 regional response and is actively participating in national and global COVID-19 efforts with more than 50 active or completed research studies and projects designed to understand our susceptibility, treatment and prevention of COVID-19 in the communities we serve and beyond. In addition to their work on COVID-19, our infectious diseases team works on collaborative, translational research and conducts clinical trials in areas that include HIV and other immuno-compromised patients, antimicrobial therapy and vaccines.





• Launched the COVID-19 Community Research Partnership, a community-based research study of the novel coronavirus; the goal of the study—which employs online data-gathering and at-home rapid diagnostic kits—is to help the medical community better understand the pandemic and regional infection patterns and the effect of COVID-19 vaccines to develop strategies and treatments to contain and possibly eliminate the novel coronavirus in defined communities

• Continued to participate as one of 89 research sites across the country in the COVE Study, a Phase 3 clinical research study to evaluate the safety and effectiveness of the Moderna vaccine or mRNA-1273, against COVID-19



# DERMATOLOGY

Our dermatology experts diagnose and treat disorders of the skin, hair, nails and mucous membranes. Specialty clinics include cutaneous t-cell lymphoma, women's skin health, contact dermatitis, pediatric dermatology, phototherapy, psoriasis, cosmetic, hair disorders, and dermatologic and cutaneous surgery.

**Clinical Focus:** The department specializes in complex medical dermatology, surgical dermatology and cosmetic dermatology and provides the full spectrum of care to our patients.

**Research Focus:** We have an active clinical trials unit for dermatologic studies. Our research is focused on psoriasis, alopecia areata, atopic dermatitis, acne vulgaris, pseudofolliculitis barbae, androgenetic alopecia, hidradenitis suppurativa, medication compliance, bullous diseases and autoimmune skin diseases.



# **FELLOWSHIPS:**

Dermatologic Surgery, Dermatopathology in collaboration with Pathology Department



• Maintained 14 active clinical trials in the department

#### DIGESTIVE

Our Digestive Health Center offers authoritative consultations by board-certified gastroenterologists, leading-edge procedures to diagnose and treat gastrointestinal diseases, a highly trained nursing staff, a full-service anesthesia team and an environment sensitive to patient comfort and privacy.

**Clinical Focus:** Our gastroenterologists perform more than 20,000 procedures a year. Patients come from across the country, state and region with digestive problems that range from the common to the very unusual and complex. Areas of focus include gastroesophageal reflux disease, endoscopic ultrasound and gastrointestinal neuromuscular disorders.

**Research Focus:** Our research focus includes gastroparesis, inflammatory bowel disease and hepatology.

**FELLOWSHIPS:** 

Gastroenterology



#### FAITHHEALTH

The Division of FaithHealth is a comprehensive community outreach program that links faith to clinical services, teaching and research programs. FaithHealth works to build webs of trust with neighborhoods marked by the most intractable chronic health care disparities. Our unique program supports the health of congregations through a group of 28 community health workers and grew out of extensive efforts in Memphis. There are now 526 partner congregations, 2,913 visiting clergy and dozens of denominations that share in the care of patients.

CareNet, Wake Forest Baptist's counseling network, is part of FaithHealth. For more than 45 years, CareNet has provided, educated and advocated for progressive mental health counseling for people of all ages. Now serving clients in more than 70 North Carolina counties, CareNet is the largest hospital-based program of its kind in the nation and provides services for adults, young children, teens, families, seniors and couples.

FaithHeath also has one of the oldest training programs for professional chaplains, and has developed new specialized types of chaplaincy, including nationally regarded first-responder chaplains embedded in local county law enforcement and EMS, and work with the homeless.



# **GERONTOLOGY / HEALTHY AGING**

Wake Forest Baptist's J. Paul Sticht Center on Aging and Rehabilitation, one of the world's first geriatrics-focused health care centers, conducts a variety of leading-edge clinical, rehabilitation, wellness and research programs to help seniors and their families understand and address the unique physical, mental, social and emotional challenges that accompany aging.

Wake Forest Baptist is one of 15 NIH-supported Older Americans Independence Centers, the Coordinating Center for the program and one of 31 Alzheimer's Disease Research Centers (ADRC) in the nation supported by the NIH. In addition, Wake Forest Baptist leads the Research Centers Collaborative Network, which builds collaborations among the six National Institute on Aging center programs across the nation.

**Clinical Focus:** We work to increase the health span of older adults through the promotion of behavioral change and by targeting the biological pathways that control the aging process.

**Research Focus:** Wake Forest Baptist's Geriatric Medicine and Gerontology Division leads many of the nation's largest randomized clinical trials enrolling older adults to assess the impact of chronic disease treatment on cognitive and physical function.



# **HEART AND VASCULAR**

Wake Forest Baptist Health is the region's comprehensive cardiovascular care center, offering state-of-the-art heart and vascular care, from minimally invasive procedures to open-heart surgery and transplants.

We combine cardiology, cardiothoracic surgery and vascular surgery to provide a multidisciplinary team approach to our patient- and family-centered care.

As part of an academic medical center, our Wake Forest Baptist researchers find new ways to prevent, diagnose and treat medical conditions. We offer a higher level of expertise and treat the most complex forms of heart and vascular disease.

Wake Forest Baptist's cardiovascular medicine and cardiovascular science center has leading investigators with national and international recognition in heart failure, prevention, molecular epidemiology/multi-omics/machine learning, cardiovascular imaging and interventional cardiology.

**Research Focus:** Our research focuses on atherosclerosis, structural heart diseases, prevention of cardiovascular disease, COVID-19 and COVID-19-related cardiovascular disease.



Cardiovascular Medicine, Interventional Cardiology, Electrophysiology, Vascular Surgery, Cardiothoracic Surgery



- Launched COVID-19 Community Research Partnership with more than 20,000 participants helping to track the spread of the virus
- Combined cardiology and cardiovascular research training program

# **INTEGRATIVE MEDICINE**

Wake Forest Baptist Health is home to the Center for Integrative Medicine as well as the Integrative Medicine Clinic. The Center for Integrative Medicine conducts, sponsors and facilitates research and educational programs. The Integrative Medicine Clinic provides specialized equitable holistic care for patients in a supportive and compassionate environment.

**Clinical Focus:** The Integrative Medicine Clinic provides specialty services including comprehensive integrative and naturopathic consultations, traditional Chinese medicine evaluation, acupuncture, cupping and acupressure, therapeutic massage, targeted physical therapy and health psychology support. Education about food as medicine, meditation, mindfulness and more is also provided.

**Research Focus:** Faculty members of the Center for Integrative Medicine have led or participated in research in the following areas in 2020: acupuncture for chemotherapy-induced peripheral neuropathy; mindfulness meditation for migraine; implementing and evaluating mHealth pain coping skills training interventions to improve self-management of persistent pain in cancer survivors; evaluating outcome and treatment mechanisms of Internet-delivered pain coping skills training for adults with chemotherapy-induced peripheral neuropathy; behavioral/ lifestyle intervention for veterans with migraine and overweight/obesity; online mindfulness for psychological distress; yoga for mild cognitive impairment and dementia; auricular acupressure for pain after hip or knee replacement surgery; acupuncture for menopausal hot flashes; ChiliPad temperature regulation while sleeping for menopausal hot flashes; cognitive-behavioral therapy and yoga for the treatment of worry in anxious older adults; and rhythmic finger focus hypnotic therapy.



- Provided auricular acupuncture to more than 200 frontline workers at Wake Forest Baptist to help with stress relief
- Increased capacity for acupuncture and massage therapy to accommodate patient need
- Provided education and rotations for medical students and interns
- Provided education about integrative medicine with collaboration across campus in multiple departments
- Increased care to patients to include five regional states
- Contributed to development and submission of numerous new research and training grants to federal agencies and foundations

## **NEPHROLOGY**

Our Section on Nephrology provides the highest standard of care for patients with all forms of kidney disease. Our physician-scientists are national leaders in inherited kidney disease and provide education to help train the next generation of nephrology specialists.

Wake Forest Baptist's outpatient dialysis program is the nation's largest academically owned and operated program – and eighth-largest dialysis provider in the nation. The program has nearly 2,100 patients who receive kidney replacement therapy through nine physician groups at our 18 facilities.

Wake Forest Baptist's Abdominal Organ Transplant program is one of the 20 most active kidney and pancreas transplant programs in the nation. Wake Forest Baptist's nephrology faculty staff the Dialysis Access Group, a free-standing facility that repairs hemodialysis vascular accesses.

**Clinical Focus:** Our clinical focus includes kidney disease (chronic, diabetic and end-stage), focal segmental glomerulosclerosis, home dialysis, hemodialysis, peritoneal dialysis, acute kidney injury and kidney transplantation.

**Research Focus:** Our research focus includes genetic kidney disease (with specific expertise in the APOL1, UMOD, MUC1 and REN genes), kidney disease in African Americans, outcomes in patients on hemodialysis and peritoneal dialysis, and hemodialysis vascular access.



**FELLOWSHIPS:** 

Nephrology, Interventional Nephrology



• Developed protocol for a national APOL1kidney disease treatment trial involving 80 medical centers and sponsored by a leading pharmaceutical company

### **NEUROSCIENCE**

The Department of Neurology provides a robust scope of services across the full spectrum of neurological disorders.

Our stroke program is a designated Comprehensive Stroke Center by The Joint Commission. Our stroke clinicians oversee our statewide, 21-hospital Telestroke Network that provides expert stroke assessment and consultation to hospitals in areas that lack 24/7 neurological coverage. Our Comprehensive Epilepsy Center is among the top-rated epilepsy programs in the nation and one of the few in the region designated as a Level IV center by the National Association of Epilepsy Centers.

**Clinical Focus:** Our comprehensive care teams include subspecialty-trained clinicians and advanced practice providers supporting stroke, epilepsy, movement disorders, multiple sclerosis, neuromuscular disorders, headache, sleep disorders, cognitive, behavioral, neuro oncology, neuro intensivists, pediatric neurology and neuropsychology programs.

**Research Focus:** Our most successful research focus areas have been headache (mindfulness-based stress reduction for migraine trial), stroke (Stroke Net trials and investigator-initiated trials, COMPASS and intranasal insulin for post-stroke cognition) and Parkinson's disease (multiple industry trials and the new NeuroNEXT trial, NN110).

#### **FELLOWSHIPS:**

Neurocritical Care, Neuromuscular Medicine, Sleep Medicine, Vascular Neurology, Epilepsy

• Reached 10,000 activations and over 1,500 tPA administrations through Telestroke program since inception

- Designated as an "Emerging Center" and received intramural funding (\$65,000) on July 1, 2019; we funded six pilot projects, and three resulted in extramural funding of more than \$1 million
- Generated \$3.1 million in extramural funding and enrolled nearly 400 participants in neurology clinical trials
- Developed Wake Investigator Network Development (WIND) program to support WAKE NeuroNEXT (WAKENN) to recruit, train and mentor neuroscience researchers to design and implement meaningful trials

FY20

ACCOMPLISHMENTS



# **NEUROSURGERY**

Neurological surgeons diagnose and treat disorders of the spine and nervous system through surgical intervention. The department is composed of 11 board-certified neurosurgeons representing subspecialty expertise in these areas: cerebrovascular, neuro interventional, pediatric, functional, neuro oncology, minimally invasive, spine and spinal deformity. The program has the only neurosurgeon board-certified in pediatric neurosurgery in the Triad.

Wake Forest Baptist's neurological surgeons are recognized as leaders in the fields of minimally invasive spine and functional surgery and hold more than 45 patents for technique and/or device development.

Neurosurgery's research includes more than 23 active clinical trials and is a top enroller in the nation for LAANTERN and VIGILANT trials. Our faculty leverages a large volume of patient care with innovative collaborations to advance our understanding of the mechanisms of normal brain and spine function and disease.

We use datasets to discover variables that predict prognosis, define clinical best practices and improve the care of those affected by neurological diseases.

#### **FELLOWSHIPS:**

Neuroendovascular, Complex Spine



- Our Winston-Salem campus was named a Blue Distinction Center for Specialty Care in Spine Surgery, a national designation awarded by Blue Cross/Blue Shield that recognizes health care providers who demonstrate expertise in delivering quality and affordable health care to meet consumers' spine care needs—safely, effectively and cost-efficiently
- Performed first deep brain stimulation surgery for Alzheimer's disease in the Southeast as part of the Advance II Trial; this will help determine if mild stimulation received via deep brain stimulation will slow the cognitive and functional progression of Alzheimer's
- Published our novel research program in neuro modulation and was awarded three RO1s and most recently published results in Neuron, the highly prestigious neuroscience publication

# **ONCOLOGY**

Wake Forest Baptist's Comprehensive Cancer Center is one of 51 National Cancer Institute-designated Comprehensive Cancer Centers, one of only three in North Carolina, and is widely recognized for its leadership, resources and the scope and substantial transdisciplinary research that bridges scientific areas.

**Clinical Focus:** The Comprehensive Cancer Center has a team of 120 clinicians representing all aspects of cancer care including those in the fields of hematology and oncology, gynecologic oncology, radiation oncology, surgical oncology, and colon and rectal surgery. These specialists are committed to offering patients the latest treatments, technologies and clinical trials, including precision medicine, cancer genomics and immunotherapy. The center also provides a range of support programs to help patients and their family members successfully address the various non-medical issues they face while dealing with cancer.

**Research Focus:** Our research programs are structured to optimize multidisciplinary and translational research. Our researchers work together to take the most promising discoveries from the laboratory into the clinic for the benefit of our patients and the cancer community as a whole.

#### **FELLOWSHIPS:**

Cancer Biology, Gynecologic Oncology, Hematology and Oncology, Hematopathology, Surgical Oncology, Radiation Oncology

• Received a six-year, \$25 million grant from the National Cancer Institute's Community Oncology Research Program to further ongoing clinical research in cardiovascular and neurocognitive complications of cancer treatments and improving patient well-being during cancer care FY20 ACCOMPLISHMENTS

- Celebrated the first anniversary of the Triad's only dedicated Cancer Survivorship Clinic and the clinic's 500th patient; clinic space is dedicated to the physical and emotional care that cancer survivors require following their treatment
- Established the Tom and Laura Hearn Professorship in brain tumor research to celebrate the leadership, advocacy and philanthropy of Laura Hearn and her husband, the late Thomas K. Hearn, PhD, former president of Wake Forest University

#### **OPHTHALMOLOGY**

The Ophthalmology Department is the only comprehensive academic ophthalmology training program in western North Carolina, offering diagnosis and management of all ophthalmic diseases, educating the next generation of ophthalmologists, and engaging in clinical trials and basic science research to find new treatments and cures for ophthalmic diseases. Our ophthalmologists see more than 90,000 patients each year.

At the Eye Center and seven additional locations, Wake Forest Baptist ophthalmologists and optometrists successfully treat patients through routine care up to the most complex and challenging eye conditions by offering the latest diagnostic evaluations and leading-edge treatments. Subspecialty care is provided by some of the nation's most accomplished and outstanding ophthalmologists.

**Clinical Focus:** Our clinical focus includes retinal diseases: diabetic retinopathy, macular degeneration and retinal detachments. Ocular inflammatory diseases are managed by either local ocular or systemic therapy with disease modulating agents. Corneal disease therapy is delivered to thousands of patients each year with conditions including dry eye, Fuch's dystrophy, herpes keratitis and keratoconus. Glaucoma is managed by the latest ocular topical, laser and surgical therapies.

Pediatric eye diseases are managed by our pediatric ophthalmology team in conjunction with our colleagues at Brenner Children's. We also treat neurologic disorders involving the eye and optic nerve as well as diseases of the eyelids and orbit. Ocular tumors are managed in conjunction with colleagues from radiation oncology and medical oncology in our Comprehensive Cancer Center. Our cataract surgical center of excellence provides the most up-to-date equipment and surgical techniques to optimize the care of our patients.



 Involved in other institutional-based trials with hematology/oncology, neurology and other disciplines to determine the effects of new therapies on the eye

inflammatory conditions

The orthopaedic surgeons and specialists at Wake Forest Baptist Health treat every type of condition—from broken bones to complex joint replacements—with advanced techniques and research-based approaches. With 80 faculty members, our goal is to provide the most advanced care possible, regardless of whether an injury requires routine or complex treatment.

**Clinical Focus:** Services include joint replacement, advanced sports injury treatments, comprehensive foot and ankle care, podiatry, problems of the upper extremities (hand, shoulder and elbow), orthopaedic trauma, pediatric orthopaedic care, orthopaedic oncology, and physical medicine and rehabilitation. Wake Forest Baptist's Fracture Liaison Service helps patients minimize their risk of fragility fractures while the multidisciplinary team at the Wake Forest Baptist Health Spine Center specializes in the comprehensive diagnosis, treatment and management of back and neck conditions, from persistent back pain and sciatica to complex spinal disorders. Our sports medicine providers care for Division 1 athletes as well as weekend warriors. We have 31 high school athletic trainers and five primary care sports medicine providers to support non-operative care, and we also have advanced training in orthobiologics and ultrasound-guided injections. **Research Focus:** Our team is on the forefront of new discoveries in Achilles tendon injuries, sports injuries, nerve repair, rotator cuff injuries, upper-extremity spasticity and vascular disorders of the upper extremity. Under the umbrella of our musculoskeletal research enterprise, we have one of only two gait laboratories in North Carolina in partnership with Winston-Salem State University's Department of Physical Therapy and the only major-league pitching laboratory in the Southeast at Wake Forest University.

#### **FELLOWSHIPS:**

Adult Reconstruction, Sports Medicine, Hand and Upper Extremity, Trauma, Athletic Training, Physician Assistant–Orthopaedic

- Secured \$3 million industry-sponsored grant to evaluate arthroscopicassisted spinal decompression
- Received The Joint Commission's Gold Seal of Approval for Total Hip and Knee Replacement at Davie Medical Center, becoming first hospital in North Carolina to receive this designation



# **OTOLARYNGOLOGY**

The Department of Otolaryngology is committed to providing state-of-the-art, compassionate care, leading the field in research and training the next generation of physicians and surgeons to the highest possible standards.

**Clinical Focus:** Our physicians practice in a range of ear, nose and throat (ENT) specialties including head and neck oncology; otology and skull base surgery; facial plastic and reconstructive surgery; otolaryngic allergy; endoscopic skull base surgery and rhinology; voice and swallowing disorders; and pediatric surgery.

We are the only academic institution in the state with high-resolution pharyngeal manometry for diagnostic and therapeutic purposes. We also have a robust head and neck surgery robotics program.

**Research Focus:** Several faculty members have active research activities with the Wake Forest Institute for Regenerative Medicine (WFIRM). In collaboration with resources available at WFIRM, our faculty are currently investigating cochlear hair cell regeneration, tracheal transplantation, cartilage engineering and salivary regeneration. We are involved in head and neck cancer research in the areas of tumor biology and Positron Emission Tomography (PET) scanning of head and neck tumors, management of swallowing disorders in aging and Parkinson's disease, and regenerating salivary gland function. We're also researching genetic markers of aggression in early skin cancers.





- Expanded in-office procedures for voice restoration and diagnosis, avoiding more expensive operative procedures
- Successful microvascular reconstruction of patient's tongue following cancer resection
- Expanded our minimally invasive endoscopic skull base surgery program, a collaboration with Neurosurgery
- Department physician appointed to the editorial board of Otolaryngology Head and Neck Surgery

# PAIN AND SPINE MEDICINE

Our Pain and Spine Medicine specialists offer comprehensive pain and spine diagnosis and treatment programs that encompass an extensive variety of advanced procedures, psychological interventions and non-opioid pain relief strategies to patients with spine, nerve and joint pain.

The Pain Center is a site and informatics lead for a Helping to End Addiction Long Term (HEAL) clinical trial network through the National Institutes of Health. More than one-third of our current faculty have NIH and other grant funding for pain and opioid research initiatives and clinical trials while maintaining busy clinical practices.

**Clinical Focus:** The Pain Center began offering virtual clinic visits with our doctors to continue an extensive variety of advanced procedures, psychological interventions and non-opioid pain relief strategies to patients with spine, nerve and joint pain. Technologically advanced procedures offered for these focus areas include spinal cord, peripheral nerve and dorsal root stimulation, kyphoplasty, radiofrequency ablation and dorsal root ganglion stimulation. Other areas of focus for neuropathic and cancer pain include treatment options such as sympathetic nerve blocks and intrathecal pump implantation. We currently see patients at four different clinic locations and perform procedures at these sites, at both of our ambulatory surgery centers and hospital.

Pain Medicine



**Research Focus:** Discovery of new approaches to eliminate pain (spinal cord and peripheral nerve stimulation, operative removal of pain nerves, music therapy), rapid identification and treatment of conditions before they escalate to severe pain (clinical informatics using artificial intelligence techniques) and application of principles of equity in care (community-engaged research, health equity assessment, and change and mobile health outreach).

#### **PEDIATRICS**

Our pediatricians and specialists provide exceptional pediatric care, focusing on the unique and complex needs of children's physical, emotional and social development. Our comprehensive pediatric and adolescent care includes routine well-check exams, immunizations and sick visits, as well as preventative, developmental and pediatric specialty care. Brenner Children's is the only comprehensive children's hospital in the Triad and northwest North Carolina.

**Clinical Focus:** Our clinical care is comprehensive rather than focused on one disease or organ system. Our pediatrics department has a long history of advocacy, and many of our research projects focus on this in our community. Caring and providing access for patients whose lives are impacted by food insecurity, pediatric obesity and problems accessing health care and medications is important to our providers and our institution.

**Research Focus:** Our neonatologists and pediatric hematology oncology experts participate in many national multicenter clinical trials and provide state-of-the-art care by staying on the leading edge of medicine as our researchers search for breakthroughs related to nephrology and neonatology. We are also a leading center in biomedical informatics, with several pediatric providers with grant funding to advance clinical care through digital systems, a true frontier in the 21st century. Additionally, we have a research team focusing on both preventing and treating childhood obesity and another working to address food insecurity.



Pediatric Emergency Medicine, Child Neurology, Neonatology, Pediatric Nephrology, Pediatric Sleep Medicine, Pediatric Epilepsy



- Opened The Birth Center to bring the full-range of birth experiences to the Triad, from natural birth to cesarean sections with all-private rooms and a 51-bed NICU next door
- Delivered more than 2,500 babies in our first year
- Performed first pediatric kidneypancreas transplant at Brenner Children's
- Obtained new research grants of more than \$1.42 million
- Recruited director of Pediatric Learning Health Systems to advance the pediatric impact

Our plastic and reconstructive surgery team is dedicated to providing personal attention, leading-edge technology and the highest quality of care to our patients. The department has embraced an institutional approach to our clinical care including wound care, cosmetic surgery and burn surgery. In addition, we continue to work on priority access for managed care patients through full clinic hours, overbook slots for same day and next day, and preferential surgical scheduling.

**Clinical Focus:** Our cosmetic procedures include facial rejuvenation, otoplasty, abdominal and extremity contouring, the treatment of varicose and spider veins, and scar revision. Reconstructive services include trauma treatment of hand, head, neck and soft-tissue injuries; congenital reconstruction of the hand, chest wall and breast; reconstructive surgery for cancer, including head and neck tumors and breast reconstruction; and acute and chronic burn care. We are also an integral part of the North Carolina Center for Cleft and Craniofacial Disorders, which provides care for cleft lip and palate, craniofacial syndromes, congenital ear deformities, vascular anomalies and other conditions.

**Research Focus:** Research spans from basic science to randomized controlled clinical trials. The majority of our research is broadly centered on challenges related to tissue salvage, tissue repair and/or tissue regeneration, but it also includes projects related to resident and student education. Specific areas of focus and expertise include the use of controlled vacuum application (mechanical tissue resuscitation) for tissue salvage, the science and clinical application of autologous cell-based therapies, the development of novel nerve repair strategies/devices, development of novel wound care dressings, and the development and application of novel nerve reations for treatment of biofilm, cancer and/or for imaging.

**FELLOWSHIPS:** 

Wound Care and Hyperbaric Medicine



- Published 40 papers in peer-reviewed journals, and presented 22 papers at national meetings
- Department is known for global health efforts and has longstanding relationships with three countries including Bolivia (burn surgery), Moldova (cleft and craniofacial surgery) and Togo (plastic surgery) to provide care and teach providers

## **POPULATION HEALTH**

The Department of Population Health provides oversight and management of matrixed, value-based contract operations for approximately 140,000 unique patients across our health system. This includes care gap closure, quality improvement, transitions of care and complex care management, clinical decision improvement/hierarchical condition category coding, pharmacy management and IT/analytics support. The department also supports special projects within primary care including CORE (e-consults) as well as benefiting the community by providing funding for several access and chronic disease initiatives in the community, including ACO/value-based lives, high-risk uninsured and needs identified through the community health needs assessment and implementation strategies.

Wake Forest Baptist performed successfully in more than 10 value-based contracts to achieve \$27.6 million in revenue.

This represents the highly collaborative work within the health system and with our ACO partner, CHESS, and a combination of managing utilization, risk and superior quality performance.





#### **PSYCHIATRY**

The Department of Psychiatry provides positive recovery and mental health wellness outcomes throughout our region by promoting patientand family-centered care, education and research. It is the full and thoughtful integration of these three elements that make academic medical centers different; it is the dedication to placing patient care first that identifies the best of these centers. At Wake Forest Baptist, the patient's best interests come first. Even though we are an academic medical center with serious commitments to education and research, we never lose sight of the fact that all our activities serve one person-the patient.

**Clinical Focus:** Our focus includes alcohol and opioid addiction, mood disorders, anxiety disorders, women's health, geriatric mental health, college mental health, autism, attention deficit hyperactivity disorder and child behavioral problems. Treatments include psychotherapy, family therapy, couples counseling, electroconvulsive therapy and transcranial magnetic stimulation.

**Research Focus:** We are involved in studies of cognitive aging and dementia, women's cognitive health, effects of blood pressure lowering on cognitive function and dementia, effects of statin use on cognitive and physical function in older adults, effects of cognitive enhancer on cancer-related cognitive dysfunction and web-based pain coping skills training for cancer-related pain. In addition, we participate in industry-sponsored trials of psychiatric medications.



#### **FELLOWSHIPS:**

Child and Adolescent Psychiatry

- Launched Collaborative Care pilot at four primary care clinics (three adult, one pediatric)
- Launched e-consults through our CORE Program
- Added telepsychiatry at Wilkes Medical Center Emergency Department







# PULMONOLOGY / CRITICAL CARE / ALLERGY AND IMMUNOLOGIC DISEASES

Wake Forest Baptist Health provides a full range of clinical services to patients with respiratory, allergic, immunologic and sleep disorders. It is the only comprehensive center for airways disease in the Southeast with National Institutes of Health-supported networks in asthma, severe asthma, chronic obstructive pulmonary disease and adult respiratory distress syndrome as well as research funded by the American Lung Association and Cystic Fibrosis Foundation.

The Section on Pulmonary, Critical Care, Allergy and Immunologic Diseases provides a wide array of clinical, research and educational activities across the full range of pulmonary, adult critical care and allergy/clinical immunology diseases. Our Cystic Fibrosis Therapeutics Development Center is one of 130 in the nation.

**Clinical Focus:** Our clinical focus includes advanced diagnostic and therapeutic bronchoscopy, comprehensive management of acute and chronic respiratory diseases, integral participation in a multidisciplinary thoracic oncology program, critical care for acute respiratory failure and sepsis, advanced treatments for occupational pulmonary diseases such as mesothelioma and asbestosis, and specialty clinics for allergy, severe asthma, pulmonary hypertension, sleep disorders, bronchiectasis and cystic fibrosis.

**Research Focus:** Our research focus includes an extensive Phase II-IV industry-sponsored and extramurally funded national and global clinical trials portfolio in asthma, COPD, cystic fibrosis, alpha1-antitrypsin deficiency, pulmonary nodules, interstitial lung disease and critical illness. We translate this research knowledge into subspecialty clinical care in airways diseases and critical care with resultant state-of-the-art clinical programs that provide exemplary regional patient care as well as allow patient participation in clinical trials. Our Airway Clinical Research Center and Wake Forest Critical Illness and Injury and Recovery Research Center are focused on translational research to bring the latest treatments to our patients.

#### **FELLOWSHIPS:**

Pulmonary and Critical Care Medicine, Allergy and Clinical Immunology, and Sleep Medicine as well as active participation in the T32 program in Cardiovascular Disease
## PULMONOLOGY / CRITICAL CARE / ALLERGY AND IMMUNOLOGIC DISEASES



- Spearheaded major clinical trials for hospitalized patients with COVID-19; we were the first health system in the country to enroll patients in a Phase 2 clinical trial (I-SPY COVID) designed to quickly determine whether drugs already approved for other uses can be repurposed to effectively treat COVID-19 in critically ill patients
- Changed the methodology of outpatient clinical research to allow patients to continue to participate in clinical research from homes in the event of regional quarantine or patient preference, including remote lung function testing with virtual coaching, distribution of investigational drugs remotely and the collection of bio-specimens by the patients
- Designed a pulmonary-focused project as part of the MARVEL study (Multidisciplinary Assessment of Risks from Vaping during Early Life) with the Wake Forest Tobacco Control Center of Excellence (through Public Health Sciences) in response to the American Heart Association initiative to combat vaping in adolescents and young adults
- Took major leadership role in the COVID-19 pandemic across the scope of clinical practice in the medical Intensive Care Unit; this included designing and successfully implementing all aspects of the planning and delivery of critical care services for patients with COVID-19 including contingency planning for meeting exceptional clinical demands

- Developed a robust telemedicine clinical program and have transitioned to a hybrid model that is flexible in the event of another shelter-in-place order or based on patient preference
- Reorganized our Sleep Medicine Program to decrease wait times for patient services and to provide time-sensitive service for patients at high risk for post-operative complications due to sleep-related disorders
- Deployed robust home testing protocol using the WatchPat device to meet increasing demand for sleep diagnostic studies
- Achieved a new milestone of more than 100,000 perioperative lives screened for sleep apnea, resulting in more than 9,743 sleep studies performed and consults among those screened; for every 1,000 surgical patients screened, 23 rapid responses, four reintubations and three code blue events were prevented
- Expanded our research efforts including perioperative sleep medicine, heart failure and central sleep apnea (Loft Trial) and most recently The Birth Center sleep screening (PregDolsnore)

## **RADIOLOGY / IMAGING**

The Department of Radiology has specialties in all aspects of imaging. Our subspecialties include abdominal imaging, breast imaging, cardiothoracic imaging, musculoskeletal radiology, neuroradiology, neuro-interventional radiology, nuclear medicine imaging/theranostics, pediatric radiology, and vascular and interventional radiology.

**Clinical Focus:** Because of the broad level of services and expertise in imaging, the department is heavily involved in clinical care and research in virtually all medical specialties.

**Research Focus:** Active research is ongoing in lung cancer screening, smoking cessation and nicotine addiction, traumatic brain injury, muscle wasting, cancer, radiotracers for cancer, nanoparticle applications in local cancer treatment, pesticides' impact in migrant children and brain/neural networks, artificial intelligence in imaging and intervention, theranostics (using radionuclides for simultaneously imaging and treating cancers), advanced imaging using MRI, CT, cone beam CT and ultrasound, and in economics of imaging.

#### **FELLOWSHIPS:**

Abdominal Imaging, Breast Imaging, Cardiothoracic Imaging, Emergency Medicine Ultrasound, Musculoskeletal Imaging, Neuroradiology, Nuclear Radiology

- Published in more than 100 peerreviewed publications and NIH grant funding of \$5 million this year, which ranks us among the top 25 medical school radiology departments for NIH research funding
- 100% of residents successfully passed radiology board examinations
- Developed CaseStacks, an extensive web-based, interactive radiology educational tool that was licensed and launched through Wake Forest Innovations

FY20 ACCOMPLISHMENTS

- Expanded PET/CT services to regional hospitals in Wilkes County and Lexington
- Opened new outpatient imaging center in Kernersville to deliver MRI, ultrasound and general x-ray and pediatric imaging to support Wake Forest Baptist pediatricians
- Established Inclusion and Diversity Committee/Task Force to analyze and operationalize education, recruitment and retention of faculty and trainees from underrepresented ethnic and gender-based groups within the Department of Radiology

## WAKE FOREST INSTITUTE FOR REGENERATIVE MEDCICINE

The Wake Forest Institute for Regenerative Medicine (WFIRM) is recognized as an international leader in translating scientific discovery into clinical therapies. More than 400 people at the institute, the largest in the world, work on more than 40 different tissues and organs.

**Clinical Focus:** WFIRM researchers have successfully engineered replacement tissues and organs in all four categories – flat structures, tubular tissues, hollow organs and solid organs – and 15 different applications of cell/tissue therapy technologies, such as skin, urethras, cartilage, bladders, muscle, kidney and vaginal organs, have been successfully used in human patients.

**Research Focus:** With its broad research capabilities, the institute pursues multiple strategies simultaneously using tissue engineering, cell therapies, diagnostics, drug discovery, biomanufacturing, nanotechnology, gene editing and 3D printing. A number of the basic principles of tissue engineering and regenerative medicine were first developed at the institute, and the research team has a growing list of world firsts, including the first to create lab-grown organs that were successfully implanted into patients.





- Employed its proprietary 3D printing system the Integrative Tissue and Organ Printer – to begin printing organoids, or tiny replicas of human organs that mimic organ functions, in the human body but are only about one-millionth the size of an adult human organ
- These organoids were sent to research partners for COVID-19 drug testing; using human cell types, WFIRM scientists have focused on lung and gut organoids which are most susceptible to the virus; the organoids allow researchers to analyze a drug's impact on an organ without the "noise" of an individual's metabolism

## **ROBOTIC SURGERY**

Minimally invasive surgery and faster recovery times are the keys to integrating robotic surgery in some areas of traditional medicine. Benefits include smaller incisions, less blood loss and pain, shorter hospital stays and a quicker return to work.

Wake Forest Baptist began its program in 2008 with a first-generation robot. We now have four da Vinci Xi robots and a Si model. One of the Xi machines is equipped with a training simulator and a second console to assist in educating future robotic surgeons. We have 24 surgeons trained, and our system has performed more than 10,000 surgical procedures. We anticipate performing 1,400 robotic cases this fiscal year across all sites and disciplines.

Wake Forest Baptist is recognized as a premier robotics center in the fields of uro-oncology, reconstructive urology, female pelvic medicine, thoracic surgery, obstetrics-gynecology, oncology, otolaryngology, colorectal and general minimally invasive surgery. We are also expanding our scope to bariatric (weight loss) surgery, donor nephrectomy and renal transplantation.

Our centers are noted internationally for developing advances in the treatment of cancer and have performed some of the world's first and most advanced procedures to treat benign and cancerous pathologies with robotic assistance. As a result, we serve patients from North Carolina and from other states and countries.

We train future physicians and educate health care providers while pursuing research that will lead to better treatments and outcomes. As a result of pioneering work in the field, our surgeons are invited by organizations worldwide to speak and perform live surgery to educate and disseminate knowledge to help start robotic programs in many other countries.



### THE BIRTH CENTER

In July 2019, Wake Forest Baptist opened The Birth Center, a 100,000-square-foot facility, which includes The Birth Center and the Dale and Karen Sisel Neonatal Intensive Care Unit. The center provides the full range of delivery options from routine, traditional births and certified nurse midwife-assisted births with hydrotherapy to cesarean and other complex births. Deliveries are attended by expert teams of obstetricians, certified nurse midwives, maternity nurses and neonatologists. All deliveries have immediate access to specialists in newborn care just steps away in the Sisel NICU, featuring the latest technology in all-private rooms and further supported by the pediatric specialists at Brenner Children's.

Innovative labor rooms are designed with patient privacy and comfort in mind, as each has an area for family members to gather that is away from the laboring mother. Procedure rooms are centrally located to handle any emergencies that may arise. A postpartum floor is configured to allow newborns to room in with mom to promote bonding.

Ours is the first NICU in the country to use a Food and Drug Administration-approved human milk analyzer to determine if specific nutrients need to be added for babies to get their best start in life.

# **FELLOWSHIPS:**

Maternal Fetal Medicine, Gynecologic Oncology, Female Pelvic Medicine and Reconstructive Surgery, Obstetric Anesthesiology, Neonatology

# more than 2.500 babies delivered in the first year

## TRANSPLANT

Wake Forest Baptist's Abdominal Organ Transplant Program is the largest kidney and pancreas transplant center in North Carolina. Our team provides comprehensive transplant care, from initial evaluations to surgery and long-term post-surgical care.

**Clinical Focus:** Our multidisciplinary team of kidney and pancreas transplant experts consists of surgeons, nephrologists, advanced practice providers, nurse coordinators, pharmacists, nurses, social workers, financial and data coordinators and ancillary staff. Our transplant recipients receive ongoing care even after their transplants. Our team provides primary care and critical care to address any issues such as post-operative immunosuppression or complex infectious disease.



James Fowler, heart transplant patient, and his grandson, Drue.



- 255 patients received kidney and/or pancreas transplants, the highest annual total since the program began, and our transplant clinic saw 9,872 visits, also the highest annual total in the history of the program
- Performed our first kidney-pancreas transplant in a pediatric recipient
- 100% success among living donor kidney and pancreas transplants during a four-year period
- Celebrated the 50th anniversary of the transplant program with more than 4,000 kidney and 300 pancreas transplants performed

## HISTORY unfolds

In 1902, Wake Forest established a tradition of educating caring, highly skilled physician leaders. Over time, the school expanded and grew in scope and reputation.

Upon his unexpected death in 1935, Bowman Gray Sr. left part of his fortune to be used for a "charitable endeavor" to help the people of Winston-Salem and the surrounding region. The money derived from the success of R.J. Reynolds Tobacco Co., where Gray served as president and chairman. His brother, wife and two sons would eventually decide to donate it to a medical school willing to relocate to Winston-Salem. Wake Forest College, then located in Wake Forest, N.C., eventually agreed to move its two-year medical school and expand it to a four-year curriculum, partnering with N.C. Baptist Hospital.

The School of Medicine is established, where a Bachelor of Science can be earned. Thirteen medical students begin their careers at Wake Forest College.



**OLD MAIN** was the original Baptist Hospital building. The five-story facility was officially dedicated on May 28, 1923. On Oct. 24, 1978, the building was demolished to make room for Watlington Hall. The Progressive Care Building was once the Blanche Barrus Nurses' Home. Completed in 1928, this is the oldest standing building at the Medical Center. Located at the corner of Hawthorne Road and Medical Center Boulevard.



1928

#### MEDICAL SUMMER SCHOOL

Wake Forest College of Medicine opens a summer school program.

North Carolina Baptist Hospital opens in Winston-Salem as an 88-bed facility with a School of Nursing. **Progressive Care Building** (Blanche Barrus Nurses' Home)

1922 1923

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Dr. Coy C. Carpenter, dean of the School of Medicine (1936-67)

It was estimated that it would cost approximately \$10 million to establish a creditable four-year medical school. Wake Forest's expectation was that they would receive about \$5 million from the Winston-Salem Foundation in their agreement to move their facilities to Winston-Salem. However, the fund only consisted of stocks worth approximately \$676,600. With the funds being smaller than expected, educational specialists advised the college not to make the move. Despite this, the college continued with its plans to move the Bowman Gray School of Medicine to Winston-Salem.



#### **BIG MOVE ANNOUNCED**

The public announcement that the medical school would be moving to Winston-Salem from Wake Forest, NC is made.

#### CARPENTER INVITES PHYSICIANS TO WFC

Dr. Coy Carpenter delivers a speech to Forsyth County Medical Society inviting physicians to the school.

#### CONSTRUCTION BEGINS

1940

Construction of the medical school building begins in Winston-Salem.



Meeting of the Eighth District Medical Society and The Laying of the cornerstone or the Bowman gray school of medicine or ware for ware folloge



THE CORNERSTONE of the medical school is laid on April 16, 1941



Medicine (BGSM).

DEPARTMENT OF MEDICAL GENETICS The School of Medicine creates the first department of medical genetics in the nation.

PRIVATE DIAGNOSTIC CLINIC The Private Diagnostic Clinic (PDC) opens.

Dr. Wingate Johnson is the first local physician

to have an office at Bowman Gray School of

Nurses participate in accelerated training during WWII. 115 of 122 who applied are accepted, receive uniforms, and salaries of \$15-20 a month. The hospital receives tuition reimbursement and nurses agree to remain in military or civilian nursing during WWII.



NURSES TRAIN IN ACCELERATED MILITARY PROGRAM

1941

1942



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(L to R) James A. Gray Jr. (brother of Bowman Gray Sr.) with his nephews, Bowman Gray Jr. and Gordon Gray.



**FIRST MEDICAL SCHOOL LIBRARIANS** The medical school library hires its first librarians, Mary Ament and Nell Benton.



**DR. LUCILE HUTAFF** Joins the faculty at the Bowman Gray School of Medicine in 1945. She later becomes the first woman to hold the rank of full professor at BGSM. She is named Emeritus Professor of Community Medicine in 1972.

Nathalie Fontaine Gray and her sons give the Graylyn estate to Wake Forest's Bowman Gray School of Medicine. The manor has 60 rooms and 46,000 square feet on an 87-acre plot of land. The original cost was \$3 million. The family also gives \$60,000 to remodel the building to be used as a rehabilitation and convalescent center.



**GRAYLYN ESTATE** 

1946

#### SCHOOL OF MEDICINE DONATION

BGSM receives donation gifts of \$125,000 each from Bowman Jr. and Gordon Gray.

Nathalie Fontaine Gray and her sons give the Graylyn estate to BGSM

1944





OUTPATIENT BUILDING COMPLETED



The Outpatient Department, which is shown here during its construction in 1946, was composed of several clinics. Each clinic was under the direction of a physician who was qualified as a specialist in a particular field of medicine. The department was created as a teaching facility for the North Carolina Baptist Hospital School of Nursing and Bowman Gray School of Medicine. The Outpatient Diagnostic Clinic opened on July 1, 1946, at a cost of \$250,000. This building was torn down in 1978 for more modern construction.



SCHOOL OF PASTORAL CARE

The School of Pastoral Care is opened in Bowman Gray School of Medicine. Here students are trained to provide spiritual support for families and patients during and after treatment.



**GRAYLYN USED AS PSYCHIATRIC FACILITY** Four services on the grounds: Graylyn School for Exceptional Children in Amos Cottage (shown above); Pediatric Development Clinic; Center for Psychology, Reading and Speech; and the Children's Center for Handicapped.





Major Russell Barnes in the "Journal" office of the Bowman Gray School of Medicine reading through an article for publishing.

DOCTORS DEFY SEGREGATION

Some black patients are treated

despite segregation of hospitals.

Clinical faculty often classify black

to bypass segregation rules.

1950s

patients as Lumbee Native Americans

Dr. George Barrett, graduate of BGSM in 1952, is shown here (left) adjusting a new scanning device used for image intensification in the radiation department. This program was believed to be the first in the US that was coordinated by an independent medical faculty member, Dr. Isadore Meschan, who was the professor and chairman of the Department of Radiology from 1955-1977.



#### **DR. ISADORE MESCHAN** joins the radiology department as chair.



#### SOUTH WING EXPANSION

The South Wing of Baptist Hospital opens with an expansion of beds for private patients. The institution is financially stable with over 15,000 admissions and over 120,000 patients.

1954

#### OFFICE OF INFORMATION

The Office of Information is established in the medical school. The Faculty Information Bulletin and Medical Alumni Notes begin.



Baptist Hospital installed a super voltage, "radiation cobalt 60" unit machine used for the treatment of cancer in patients.

1956



The Davis Memorial Chapel has strategically placed symbols everywhere. There are symbols in the ceiling panels, stained glass windows, carvings, and everything else in between. On the altar, the intricate woodwork design of clustered oaks signifies strength and longevity; the acorns, birth and regeneration.

#### INNOVATION IN CANCER TREATMENT

The School of Medicine and Baptist Hospital become the first in NC to use cobalt to treat cancer patients.

#### DAVIS MEMORIAL CHAPEL

is built in Baptist Hospital in memory of Annie Pearl Shore Davis and in honor of Egbert L. Davis Sr.





The expansion of the original medical school building in 1959 doubled the square footage of the school, adding 75,490 new square feet of space. In 1959, the original school of medicine building took the name "James A. Gray Memorial Building." The dedication ceremony was held on Oct. 23, 1959, in honor of James A. Gray Jr. who passed away in 1952. James Gray was Bowman Gray's brother.

#### WAKE FOREST UNIVERSITY PHYSICIANS

Department of Clinics incorporates a professional practice plan – the first of its kind in the nation – now named Wake Forest University Physicians.

#### JAMES A. GRAY MEMORIAL BUILDING The BGSM celebrates its

20th anniversary with the dedication of James A. Gray Memorial Building.

DR. JAMES G. "JIM" JONES,

a Lumbee Indian who grew up

in Pembroke, NC, in 1959

became the first Native American MD student to graduate from BGSM.



1960

**DR. JEAN BAILEY BROOKS** was the only female in her BGSM Class of 1944. She was also the first female president of the Medical Alumni Association.

Pictured here in 1960 – (L-R) Dr. J. Taylor Brooks and his wife, Dr. Jean Bailey Brooks, with Dr. Manson Meads, all from North Carolina Baptist Hospital.



**DR. RUSSELL REITER** was the very first PhD graduate at BGSM in 1962.

#### PROGRESSIVE CARE CENTER

(PCC) remodeled and receives national attention. The center opens on March 15, 1961, for the purpose of taking care of hospital patients who do not need full-time nursing care.

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1961

MEDICAL SCHOOL'S FIRST PHD The first PhD, anatomy, is approved by the Graduate Council.

1964

#### **FIRST HAND** REIMPLANTATION

Jesse Meredith, MD, performs the first hand reimplantation in the US on

patient Robert Pennell.

DESEGREGATION OF THE MEDICAL SCHOOL & HOSPITALS

#### COMPUTER SYSTEM GRANT

The medical school receives a \$984,000 grant from National Institutes of Health (NIH) for a computer system.

#### FIRST FULL-TIME AFRICAN AMERICAN FACULTY MEMBER Dr. William Quivers served as a

professor of pediatrics.





DO NOT TURN TERMINAL OFF

physician was able to get much needed which reflected much better patient care. Shown here is a physician taking a computer tutorial course.





FIRST AFRICAN AMERICAN MEDICAL STUDENT WILLIAM GRIMES ('72)



The five-story Hanes Building is dedicated in March 1970, which allowed for increased enrollment of BGSM students in 1969. In 1988, six additional stories were added giving the building over 252,000 square feet of space to include room for 16 laboratories, 88 multipurpose laboratories, 16 cold rooms and two lecture rooms. The last class of diploma nursing students graduates and the program is phased out at the Medical Center with the graduating class of 85 senior nursing students.





CANCER DETECTION Wake Forest becomes the first in

the nation to use an ultrasound to detect prostate cancer.

HANES BUILDING Named in honor of the Hanes family. FIRST AFRICAN AMERICAN NURSING STUDENT

Fernanda Gordon



AFRICAN AMERICAN NURSING DIRECTOR

Gwen Andrews was nursing director from '74-'88.



1972



LAST CLASS OF THE

NURSING PROGRAM

In July of 1974 the first computerized axial tomography (CAT) scanner in North Carolina is installed in the radiology department.





FIRST CAT SCANNER IN NORTH CAROLINA

FIRST AFRICAN AMERICAN FEMALE MD GRADUATE Yvonne J. Weaver. MD

RONALD HOUSE

#### HOME AWAY FROM HOME

Penny and Dick Latham lost a three-year-old son to leukemia in 1980. In honor of their son's memory, they started getting the community and other parents who had also lost children involved in an idea of

providing a "home away from home" for families of children who were seriously ill. It was first called "Rainbow House." The currently facility is now known as Ronald McDonald House and includes 35 bedrooms with private baths.

PIEDMONT ONCOLOGY ASSOCIATION Dr. Charles Spurr establishes the Piedmont Oncology Association, which establishes an outreach program for cancer treatment and research.

**BRENNER CENTER FOR ADOLESCENT** 

**MEDICINE** opens, 1 of only 26 in the nation. It provides patient care and training of students and physicians in problems involving teenagers.

1975

1976

1980s



#### FATHER OF NEUROSONOLOGY

Dr. William M. McKinney came to BGSM in 1959 as an intern in neurology and retired in 1997. McKinney was best known for his pioneering work with ultrasound techniques used to study the nervous system in the brain intracranial vessels, spine and nerves called neurosonology.



Because of Dr. McKinney's research, he is credited with developing the term neurosonology. He also established the first laboratory in the US that used transcranial Doppler sonography (neurosonography) for a means of diagnosis and treatment of patients.



A state-of-the-art diagnostic Magnetic Resonance Imager, housing a magnet with a magnetic field 30,000 times stronger than Earth's magnetic field. MRI uses a magnet field and radio waves to "see" inside a patient's body. The stronger the field, the clearer the picture.

#### LEVEL ONE TRAUMA

A Level I Trauma Center is capable of providing total care for every aspect of injury– from prevention through rehabilitation.

1982

#### TRANSCRANIAL DOPPLER ULTRASOUND

The Medical Center becomes the first in the nation to use transcranial Doppler ultrasound.

#### NC'S FIRST MRI

1983

A Magnetic Resonance Imaging (MRI) system is installed, which is the first in the state at an academic medical center.





A formal affiliation agreement is signed between the Bowman Gray School of Medicine and one of the largest medical centers in the People's Republic of China – Zhongshan Medical Center (later renamed the Sun Yat-Sen University of Health Sciences).



Aerial view of possibly the first AirCare helicopter of North Carolina Baptist Hospital. Service began in 1986. First crash happened Sept. 23, 1986. Neonatal transport service began in 1987.



The first heart transplant at Bowman Gray School of Medicine/ Baptist Hospital is performed on 17-year-old Jeffrey Richardson, and is a success.

BGSM & ZHONGSHAN MEDICAL CENTER BAPTIST AIRCARE Baptist Hospital establishes AirCare, a helicopter emergency medical service.

BGSM'S FIRST HEART TRANSPLANT

1986





Bill Anderson looks at a machine that helps with organ transplants. Anderson was hired at BGSM as supervisor of organ acquisitions, part of Surgery Research in the Hanes Building.

#### TOKAI UNIVERSITY

Bowman Gray School of Medicine begins academic affiliation with Tokai University of Japan. BONE MARROW TRANSPLANTATION program is established.

#### SINGLE-LUNG TRANSPLANT

Medical Center surgeons perform the first single-lung transplant in NC.



#### MEDICAL CENTER LEADS INNOVATION IN NC

The Medical Center became the first in the Carolinas to treat tumors and blood vessel abnormalities deep within the brain by using stereotactic radiosurgery, a process so precise that it destroys the tumor or vessel problem with no effect on surrounding tissue. The mechanical device shown here has head-holding clamps and bars which put the head in a fixed position in reference to three specific coordinates. It is a minimally invasive surgery that usually allows the patient to return home the same day.



**INNOVATION IN BLOCKED ARTERY PROCEDURES** Medical Center cardiologists become the first in North Carolina to successfully open a blocked artery using a laser.

Pam Brown needed a new kidney and she also needed a pancreas. She coped with diabetes for 23 years that had affected her vision, her nervous system and then led to total kidney failure in 1990. A kidney transplant would more than likely fail because of the diabetes, whereas a new pancreas would get to the root of the problem. Dr. Michael Rohr, director of the Medical Center's transplant program, performed the first double organ transplant here at North Carolina Baptist Hospital. (L-R) Pam and Wayne Brown.

#### DOUBLE ORGAN TRANSPLANT

Pam Brown receives a new pancreas and kidney from Dr. Michael Rohr.

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(L-R) Dr. Walter Ettinger Jr., J. Paul Sticht and Dallas Mackey, director of the Office of Develpment and Alumni Affairs at Wake Forest Baptist. Gamma Knife facilitates treatment of very small targets deep within the brain.

201 radioactive beams are focused on the target through a metal helmet, in which the patient's head is placed.

#### **CENTER ON AGING & REHABILITATION**

The J. Paul Sticht Center on Aging and Rehabilitation opens. It is the first facility in the world to incorporate geriatric acute care, transitional care, psychiatry and rehabilitation under one roof.

#### INNOVATION IN BLOCKED BLOOD VESSEL

**PROCEDURE** The first in the world to report the successful use of magnetic resonance imaging (MRI) to diagnose significant blockages in blood vessels leading to the heart.

#### NC'S FIRST GAMMA KNIFE

 $\Pi D$ 

The Medical Center installs first and only Gamma Knife in NC. The Gamma Knife is an alternative to traditional brain surgery.



GliaSite Radiation Therapy System, a balloon catheter device for the delivery of brachytherapy in brain cancer patients.



WFU RESEARCHERS MAKE CHROMOSOME DISCOVERY Wake Forest Baptist Medical Center researchers are the first to report that unidentified genes on chromosomes 18 and 3 are linked to severe kidney damage in younger blacks with diabetes.

#### CENTER FOR HUMAN GENOMICS

Bowman Gray School of Medicine establishes a Center for Human Genomics to facilitate the identification of high-risk genes linked to common diseases, enabling improved treatment for these diseases.

#### FORENSIC NURSE EXAMINER PROGRAM

The Medical Center establishes a Forensic Nurse Examiner Program within its Emergency Department to treat victims of domestic violence, sexual assault and child abuse.

#### INNOVATIONS IN BRAIN TUMOR TREATMENT

Physicians at Wake Forest Baptist Medical Center are the first in the world to treat a brain tumor patient with the newly FDAapproved GliaSite Radiation Therapy System.

#### **SMELL & TASTE CENTER**

The Wake Forest University Smell and Taste Center opens, 1 of only 3 comprehensive centers in the country and the only one in the Southeast.

2003

2000

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2002

A pliable, mesh material is used as a scaffold to support the cells as they grow and develop. Smooth muscle cells obtained from the patient are seeded on the exterior of the scaffold.





#### LASIK DISCOVERY

A Medical Center researcher is the first to report that humidity and temperature levels can affect the results of LASIK surgery. For best results, physicians should take these factors into account when calibrating laser equipment.

#### INSTITUTE FOR REGENERATIVE

**MEDICINE** The Institute for Regenerative Medicine becomes the first in the world to grow bladders and implant them in pediatric patients.

#### DEAC CLINIC

2008

Delivering Equal Access to Care (DEAC) Clinic opens, staffed by MD students (once/month at Community Health Center). DEAC strives to address the long-term primary care health needs of underserved communities in the area. Additionally, medical students gain experience in clinical skills outside of class.

2004

2006



#### FALLS ASSESSMENT PROGRAM

J. Paul Sticht Center on Aging implements Falls Assessment program by pairing MD students with healthy volunteers from Meals on Wheels in Forsyth County in the hope of providing health interventions to homebound older adults. Brenner Children's EMERGENCY

**LEVEL I PEDIATRIC TRAUMA CENTER** Brenner Children's Hospital opens the only Level I Pediatric Trauma Center in NC. The Emergency Department opens a new state-of-the-art, child-friendly emergency medicine facility just for pediatric patients.



Architectural rendering of the Wake Forest School of Medicine's proposed Medical Education Building.

#### TOYOTA'S COLLABORATIVE SAFETY RESEARCH CENTER

2011

The Medical Center is 1 of 6 research institutions across the US chosen to be part of Toyota's Collaborative Safety Research Center to enhance the development, testing and implementation of new automotive safety measures.

#### **BIOTECH PLACE**

Wake Forest Biotech Place, a world-class research building, opens in Piedmont Triad Research Park, another milestone in development of the pioneering downtown park.

2012

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2012



Robert J. Gfeller Jr. named executive director of the Childress Institute for Pediatric Trauma. Pediatric trauma is an intensely personal issue for Gfeller and his wife, Lisa, who lost their younger son, Matthew, following a traumatic brain injury that occurred during a local high school football game. The family established the Matthew Gfeller Foundation to support pediatric traumatic injury research, prevention and awareness and have been tireless activists on behalf of the cause.



#### STUDY OF HEAD TRAUMA IN YOUNG FOOTBALL PLAYERS

The Virginia Tech-WFU School of Biomedical Engineering and Sciences launches the Kinematics of Impact Data Set (KIDS) study, and 240 youth football players age 6-18 in VA and NC start wearing helmets with sensors to collect data on head impacts.

#### COMPREHENSIVE STROKE CENTER

The Medical Center becomes 1 of 33 medical centers nationwide to be certified as a Comprehensive Stroke Center by The Joint Commission.

#### NURSE ANESTHESIA PROGRAM RECEIVES PRESTIGIOUS ACCREDITATION

The Nurse Anesthesia program is the first in the country and second in world to be accredited by the International Federation of Nurse Anesthetists.





#### TRANSCAVAL VALVE REPLACEMENT

Wake Forest Baptist cardiac surgeons are the first in the state to perform a less-invasive aortic valve replacement procedure called transcaval valve replacement.

#### PTSD RESEARCH

The US Department of Defense funds Wake Forest School of Medicine research to evaluate the effect of using brainwave balancing to reduce symptoms related to post-traumatic stress disorder (PTSD) in military personnel.

#### STROKE PREVENTION RESEARCH

Wake Forest School of Medicine stroke researchers play a key role in the development of new guidelines issued by the American Heart Association to help prevent stroke in women.



#### **3D PRINTER TO REPAIR INJURIES**

Wake Forest Baptist scientists use a 3D printer to print live tissue that can be used to repair injuries.

#### ABDOMINAL ORGAN TRANSPLANT PROGRAM

The Abdominal Organ Transplant Program performs its 3,000th kidney transplant.

2014



#### Wake Forest<sup>°</sup> Baptist Health



Transformative Academic Health Care System Atrium Health, Wake Forest Baptist Health and Wake Forest University announced that as part of a series of ongoing milestones, they will unite and further invest in the health and well-being of people throughout the region. The agreement will revolutionize the ways people become and stay healthy, ultimately enriching countless lives and communities throughout North Carolina, the Southeast and the entire nation.



COVID-19 PANDEMIC HITS THE US



#### DRONE DELIVERY SERVICE

2020

Wake Forest Baptist and iQ Healthtech™ Labs, our healthtech business enterprise located in the Innovation Quarter along with UPS, launched a drone delivery service, the first of its kind in the drone delivery industry.

2019

## looking to the FUTURE

The Wake Forest School of Medicine, will begin establishing a regional campus in Charlotte, NC, which will bring our nationally ranked education and research programs to students and expand our ability to train the best medical providers for the communities we serve. A 20-acre site in midtown Charlotte, at South McDowell Street and Baxter Street, adjacent to US-277 has been selected for the campus.

The School of Medicine campus will be located less than three-quarters of a mile from Atrium Health Carolinas Medical Center. The campus of the health system's flagship hospital is undergoing an extensive renovation, ensuring students will have access to the most modern, state-of-the-art facilities and technology in all of their learning environments.

The initial class of Wake Forest School of Medicine – Charlotte first-year MD students is anticipated to begin their education in 2024.

In addition to the location of the medical school, Atrium Health has established the Bishop George E. Battle Jr. Scholarship Fund to support the continuing education of those who live in underserved communities.



2021...

### UROLOGY

The Section on Urology is a major referral center that brings together the best of patient- and family-centered care and research. We offer expertise and the latest diagnostic techniques and treatments for a range of urologic conditions for children and adults. The urology service has several thousand hospital admissions and approximately 24,000 outpatient visits annually, providing the complete spectrum of care for adult and pediatric urologic disorders.

**Clinical Focus:** Our physicians have expertise in treating kidney stones, urologic cancer, incontinence, pelvic issues, men's health issues and pediatric urology. The department includes a team that specializes in women's pelvic health issues, ranging from incontinence and sexual dysfunction to pelvic pain and prolapse. The department specializes in minimally invasive surgical procedures, including robot-assisted laparoscopic procedures for both adults and children.

Wake Forest Baptist's urologists are experienced in caring for the most complicated and difficult cases. The Department of Urology and the Comprehensive Cancer Center, the only National Cancer Institute-designated cancer center in the region, form part of the Wake Forest Prostate Cancer Center of Excellence, providing the most advanced and personalized care for patients.

**Research Focus:** Our urology team conducts research in the areas of female and male pelvic health, cancer, kidney, bladder, prostate and genital disease, pediatric urology and regenerative medicine.



#### **FELLOWSHIPS:**

Endourology/Stone Surgery, Laparoscopic/ Robotic Surgery, Pelvic Health, Reconstructive Urology



• Added surgical services at Lexington Medical Center; the department now sees patients in 13 locations

• Published 141 papers related to advances in urology in peer-reviewed medical journals The Department of Vascular and Endovascular Surgery is a group of 10 vascular surgeons, one vascular medicine physician and eight advanced practice providers who provide comprehensive care for the entire spectrum of vascular conditions. We are the largest academic vascular surgery group in the state and region, and we provide surgical care at four hospitals throughout the Piedmont region of North Carolina. Our group is a nationally recognized leader in the treatment of circulatory disorders of the kidney and intestinal arteries, and we are a regional leader in the treatment of complex aortic pathology. In concert with our colleagues in orthopaedic surgery, we offer the most comprehensive services for circulatory disorders of the hand and upper extremity in our region as well.

**Clinical Focus:** Our clinical focus is the entire spectrum of medical conditions affecting the vasculature. We help prevent strokes, repair abdominal aortic aneurysms, improve poor circulation in the legs, arms, neck and kidneys, and handle vascular trauma and varicose veins. Our vascular specialists perform the most advanced medical, surgical and catheter-based procedures (endovascular) available in the nation to treat vascular diseases and disorders.

**Research Focus:** Our research focuses on circulatory disorders of the kidney, amputation prevention in those with diabetes, and the measurement and impact of frailty on surgical outcomes. We also have active efforts in clinical trials, including an investigator-initiated trial of dialysis access methods in the elderly in concert with our colleagues in nephrology. Our research also focuses on automated critical care and circulatory support in hemorrhagic shock and the creation of automated/ robotic mechanisms of vascular access and circulatory support for battlefield and remote location application. These efforts received awards of more than \$3 million in funding in FY20.

**FELLOWSHIPS:** 

Vascular Surgery



- Received three major research grant awards totaling more than \$3 million
- Maintained top-quintile performance in Vizient metrics regarding mortality, length of stay and avoidance of hospital-acquired conditions and patient safety events

## WOMEN'S SERVICES

Our Ob-Gyn providers offer individualized state-of-the-art care for women, from adolescence to menopause. As leaders in the field, our physicians offer a range of general and specialty care that covers the entire spectrum of obstetrics and gynecology.

**Clinical Focus:** Our clinical focus includes obstetrics and gynecology, maternal fetal medicine, minimally invasive gynecologic surgery, gynecologic oncology, reproductive endocrinology and infertility, and urogynecology.

**Research Focus:** Our Center for Research in Obstetrics and Gynecology explores research in fetal and neonatal development, pregnancy and labor, maternal obesity, uterine contractility, and cervical electrical activity and its role in sperm transport. We are also actively involved in clinical trials to help develop the latest and most advanced treatment options for our patients.

#### **FELLOWSHIPS:**

Maternal Fetal Medicine, Gynecologic Oncology



- Opened The Birth Center
- Relocated all general gynecology surgery to Wake Forest Baptist Health locations
- Enhanced women's health APP utilization at a section level across our ambulatory footprint from Wilkes to Asheboro; as part of this, we have begun integrating certified nurse midwives into our prenatal care model as a section
- Increased research productivity with multiple IRB protocols and initiation of NIH grant; submitted two new R01 NIH grant applications in FY20
- Advanced our OncoFertility program through collaboration with urology and oncology; great increase in the number of cases of elective oocyte cryopreservation

## WAKE FOREST SCHOOL OF MEDICINE/INNOVATIONS STATS








# WE DISCOVER

through the infrastructure to translate research into patient care.

### WE DISCOVER

As the only academic medical center in north-central and western North Carolina, Wake Forest Baptist Health's research enterprise is missiondriven to improve the health of those in the communities we serve and to benefit those around the world. Our researchers determine and develop new treatment options and care protocols to prevent and treat disease specifically in these areas: heart and vascular disease, cancer, brain and neurological conditions and injury, diabetes, obesity and metabolism, healthy aging and substance use disorder.

These Centers and Institutes support our research:

- Hypertension and Vascular Research Center
- <u>Center for Precision Medicine</u>
- Sticht Center for Healthy Aging and Alzheimer's Prevention
- Center for Diabetes, Obesity and Metabolism
- <u>Wake Forest Institute for Regenerative Medicine</u>
- <u>Center for Biomedical Informatics</u>
- <u>Center for Substance Use and Addiction</u>
- <u>Critical Illness, Injury and Recovery Research Center</u>
- Maya Angelou Center for Health Equity
- <u>Center for Vaccines at the Extremes of Aging</u>
- <u>Center for Integrative Medicine</u>
- <u>Center for Redox Biology and Medicine</u>
- <u>Childress Institute for Pediatric Trauma</u>

Wake Forest Clinical and Translational Science Institute (CTSI) provides the infrastructure to translate research discoveries into patient care.



### **RESEARCH/FUNDING**







# WE TEACH

our students using an individualized approach to prepare them to be clinicians and educators.

### **PROGRAMS**

Wake Forest School of Medicine directs the education of 1,200+ students in these programs:

- Doctor of Medicine (MD)
- Physician Assistant (PA)
- Nurse Anesthesia (CRNA)
- Graduate Studies (HCL, CRM)
- Doctor of Nursing Practice (DNP)
- Joint School of Bioengineering and Sciences

We also offer 70 Graduate Medical Education (GME) programs and a center for continuing medical education certification through the Northwest Area Health Education Center (AHEC).

The Bowman Gray Center for Medical Education is designed with the next generation of physician-scientist leaders in mind.

The state-of-the-art building, a former R.J. Reynolds Tobacco Co. manufacturing plant, offers students a leading-edge experiential and applied learning environment to acquire clinical knowledge and skills and learner-centered innovative spaces that include:

- Anatomy lab
- Clinical skills lab
- Patient-simulation suites
- Ultrasound lab
- Outpatient clinic simulation for standardized patient training
- Tiered and flat, configurable classrooms
- Multiple small-group meeting and study rooms
- Dedicated student learning community ("houses") space

### INDIVIDUALIZED MD CURRICULUM

Our curriculum provides an individualized approach to prepare students to be clinicians and educators. It positions graduates for outstanding performances in the top residency training programs in the nation.

The curriculum is divided into three phases:

- Foundations: Learning basic science principles integrated with clinical application
- Immersion: Completing required clinical rotations
- Individualization: Continuing more advanced clinical rotation experiences that adapt training to meet the demands and expectations of students' career paths

Longitudinal topics are interwoven in small group experiences throughout all phases including curricular threads in Pharmacology, Pain Management, Health Equity and Justice.



### **USMLE SCORES**

Medical students must complete national exams by the United States Medical Licensing Examination (USMLE). These exams are gateway milestones to proceed in the curriculum. All US medical students take the Step 1 and 2 exams.



of WFSM Students

of ALL Schools

PASSED

PASSED

WFSM Students

**TESTED** 

months by the NBME due to the impact

of the COVID-19 pandemic on the

ability of testing centers to safely implement this in-person CS exam.

(SD) points.

\*Mean Score with standard deviation

national performance (Performance of students taking USMLE Step 2 Clinical Skills (CS) for the first time between July 1, 2019 and Jan. 25, 2020\*):

78 | Wake Forest Baptist Health | STATs 2020

## **2020 RESIDENCY MATCH RESULTS**





## HEALTH CARE LEARNING OPPORTUNITIES

Our Physician Assistant (PA) program is ranked No. 7 by *U.S. News & World Report.* The program is in its 51st year with 88 students each on two campuses at the Innovation Quarter (iQ) in Winston-Salem and Appalachian State University in Boone, More than 2,300 students have graduated from our PA program since its founding in 1969.

The program has innovative sequential degree programs to provide additional education options to students.

- » Emerging leaders MS in Business
- » Emerging leaders Law MS in Legal Studies

Our Department of Academic Nursing, within the School of Medicine, offers two programs:

» Certified Registered Nurse Anesthesia (CRNA) program is two years for registered nurses.

» Doctor of Nursing Practice (DNP) program is designed for nurses seeking a terminal degree in nursing, offering an alternative to researchfocused doctoral programs.

- The department achieved accreditation to provide both distance education degree programs and accreditation to offer a DNP degree for entry to practice for CRNAs. Plans are underway to offer a threeyear DNP program for new CRNAs next fall.
- The Nurse Anesthesia program remains ranked No. 10 nationally.
- Graduates perform very well on the CRNA certification examination. 33% of graduates had passed their certification exam within four days of program completion and 100% were certified within one month.
- The DNP program graduated its first cohort.
- The Nurse Anesthesia program remains the only site in the country accredited to provide high-stakes simulation-based testing for CRNA re-entry to the profession.
- Based on experience with high-stakes simulation testing and teaching, the Academic Nursing Department achieved accreditation by the Society for Simulation in Healthcare in both teaching and assessment by simulation. Our department is only the second in the state to achieve accreditation in both of these areas, and the first nationally to achieve this at the department level.

## **GRADUATE DEGREE PROGRAMS**

Master's and doctoral degrees in research:

- » Biomedical Engineering
- » Physiology and Pharmacology
- » Neuroscience and others

Master's degrees in clinical leadership and management:

- » Addiction, Research and Clinical Health launched August 2018
- » Clinical Research Management launched August 2020
- » Healthcare Leadership launched January 2021
- » Genetic Counseling launches August 2022

### **FELLOWSHIPS:**

#### Fullbright Scholarship:

- Moriah Jackson (MS 2020) to conduct biomedical research at the Universiti Tehnologi MARA in Malaysia
- Danielle Medina-Hernandez to conduct biology research at University of Copenhagen

#### Gilliam Fellowship from Howard Hughes Medical Institute:

• Martin Rodriguez – for his research with Wake Forest Institute for Regenerative Medicine

#### Herbert Nickens Medical Student Scholarship Award - AAMC:

• Lauren West-Livingston – MD-PhD Student



- Launched the COVID-19 Community Research Partnership, a community-based research study of the novel coronavirus; the goal of the study—which employs online data-gathering and at-home rapid diagnostic kits—is to help the medical community better understand the pandemic and regional infection patterns and the effect of COVID-19 vaccines to develop strategies and treatments to contain and possibly eliminate the novel coronavirus in defined communities
- Continued to participate as one of 89 research sites across the country in the COVE Study, a Phase 3 clinical research study to evaluate the safety and effectiveness of the Moderna vaccine or mRNA-1273, against COVID-19





# WE TRANSFORM

with a mission to drive economic growth and build a vibrant community in downtown Winston-Salem. Innovation Quarter is a fast-developing, mixed-use innovation district with a mission to drive economic growth and build a vibrant community in downtown Winston-Salem. The Innovation Quarter is an enterprise of Wake Forest Baptist Health, in collaboration with private developers, Wexford Science + Technology, the City of Winston-Salem and Forsyth County.

Innovation Quarter provides a distinctive urban setting for business, research and education to connect and for people to work, live, learn and play. While Innovation Quarter offers class A office, laboratory and research space, it also provides a true mixed-use environment, with restaurants, retail, green space and apartments strategically located within and around the district.

Innovation Quarter attracts a diverse mix of scientists, students and early and established companies. It provides incubator facilities and mentoring services, supports current and future tenants and serves as a catalyst for the innovation ecosystem in Winston-Salem and the Piedmont Triad, providing opportunities for enhanced learning, growth and discovery for the community. Academic entities located in Innovation Quarter include Wake Forest School of Medicine's Bowman Gray Center for Medical Education, Wake Forest University's Engineering and Biosciences programs, Forsyth Tech Community College, Winston-Salem State University and UNC School of Arts. It is also home to Wake Forest Institute for Regenerative Medicine, co-working space, a conference center, Bailey Park and a publicly accessible greenway. Key organizations represented in the Innovation Quarter include Inmar, Wells Fargo, Clinical Ink, The Variable, Wake Forest Baptist Health offices and iQ Labs, which are designed to bring industry partners together with anchor tenants to bring existing healthtech concepts to future generation fruition. Early partners in iQ Healthtech Labs include UPS Flight Forward, Oracle Life Sciences, Emtiro Health, Kitsbow and Medcost.

For the past eight years, Wake Forest Baptist Health has partnered with Wexford Science + Technology in the development of 1.2 million square feet of space in Innovation Quarter. Wexford is a real estate investment and development company that specializes in facilities for universities, university-related research parks and health care systems. Wexford's unique, collaborative approach and working closely with clients, results in knowledge communities that are vibrant, mixed-use, amenity-rich environments that foster innovation.

### **INNOVATION QUARTER**







# OUR COMMUNITIES

### **PATIENT ENCOUNTERS**



### LOCATIONS



## WAKE FOREST BAPTIST MEDICAL CENTER

Wake Forest Baptist Medical Center is an 885-bed tertiary-care hospital in Winston-Salem, NC, that includes the region's only children's hospital, Brenner Children's Hospital and The Birth Center.

The Medical Center is part of Wake Forest Baptist Health, the region's only health care system with an academic medicine focus, and the flagship hospital of the system. The Medical Center is home to a National Institutes of Health-designated Comprehensive Cancer Center, one of only 51 in the United States, a national center for Aging and Alzheimer's disease, the J. Paul Sticht Center, the region's only Level I adult and children's trauma and burn center, the comprehensive Eye Center as well as to clinical centers of excellence in multiple specialties including cardiovascular, brain health and neurology, sports medicine and orthopaedics, transplantation and nephrology.

It is also home to AirCare, part of an EMS network serving patients in North Carolina, Virginia, West Virginia, Tennessee and South Carolina and to the Brenner Children's Hospital Critical Care Neonatal/Pediatric Team, which transports critically ill children through their 17th birthday to the pediatric intensive care unit, the pediatric emergency department and the neonatal intensive care unit at Brenner Children's. These comprehensive clinical and transport services regularly draw patients from 22 counties in central and western North Carolina, southern Virginia and eastern Tennessee.

The Winston-Salem campus also includes Wake Forest School of Medicine research facilities, supervised medical students in training, residents and fellows.





91,600 Emergency Department visits



50,000







## **Brenner Children's**

Brenner Children's Hospital is one of five children's hospitals in North Carolina and serves central and northwestern North Carolina, southern Virginia and eastern Tennessee.

The "hospital within a hospital" at Wake Forest Baptist Medical Center in Winston-Salem houses a new leading-edge facility: The Birth Center and adjacent Dale and Karen Sisel Neonatal Intensive Care Unit, 160 private rooms and four playrooms.

Brenner Children's is home to the region's

- only Level 1 Verified Children's Surgery Center by the American College of Surgeons
- only Level 1 Verified Pediatric Trauma Center by the American College of Surgeons-open 24/7/365
- only dedicated Pediatric Emergency Department
- only specialized Pediatric Transport Team for critically ill neonates and children

Brenner Children's has more than 150 pediatricians and pediatric specialists in over 30 areas of pediatric medicine and surgery with technologies and equipment that are uniquely designed for children.

Brenner Children's was made possible through a generous gift from the Brenner family in 1986 when the long-awaited dream of a children's hospital to serve our region became a reality.

### Each year at Brenner Children's...



5,500<sup>+</sup> Pediatric hospital admissions



**25,000+** Pediatric **subspecialty** visits



**37,000**+ Pediatric Emergency Department visits



**100,000** Pediatric **outpatient** clinic visits

## **DAVIE MEDICAL CENTER**

Wake Forest Baptist Health Davie Medical Center is a 50-bed acute care hospital in Bermuda Run, NC, that serves residents of Davie County and surrounding areas. Davie Medical Center is the successor to Davie County Hospital, which was founded in 1956. The new campus opened in August 2013 and has continued to grow to meet the needs of the community.

As part of Wake Forest Baptist Health, Davie Medical Center has direct access to the medical experts and resources of a nationally recognized academic medical center, which enables the facility to offer world-class health care close to home.

Davie Medical Center provides a wide range of patient- and familycentered primary and specialty services that include a 24/7 emergency department, an eye center, cardiology and cardiac rehabilitation, digestive health, an orthopaedics/total joint replacement program, neurosurgery, a spine center, occupational and physical therapy, pulmonology, lab and imaging services, and pharmacy on its campus near Interstate 40. This past year, Davie Medical Center received multiple awards from Press Ganey, a national patient experience company. Davie received the Guardian of Excellence award for its inpatient services, medical practice and its ambulatory surgery program. The Pinnacle of Excellence was also awarded to Davie's Ambulatory Surgery Program. The medical center was also recognized by Becker's Hospital Review as one of the top 22 patientrecommended hospitals in the nation. These awards are a result of a great team culture of patient- and family-centered care.

Davie Medical Center honors the legacy of those in the Davie County community who supported the early and continued efforts to bring and retain a hospital to the county through a History Wall exhibit located on the ground level of the medical center.







High Point Medical Center is a 351-bed acute care hospital in High Point, NC, that serves the residents in the community and surrounding areas in Guilford County. The medical center provides the full range of hospital-based services including emergency, cardiovascular, women's, behavioral health and inpatient rehabilitation services, general, vascular, bariatric, orthopaedic and spine surgery. Patient- and familycentered care extends to its six specialty areas: Congdon Heart and Vascular Center, Hayworth Cancer Center, Neuroscience Center, Esther R. Culp Women's Center, Emergency Center and Piedmont Joint Replacement Center.

High Point Medical Center was founded in 1904 as the Junior Order of Mechanics Hospital in response to the organization's concern about the effects of typhoid and smallpox epidemics on their members and neighbors in their growing town. They purchased a two-story house on Boulevard Street and converted it into a facility that could accommodate 12 patients. Staff consisted of four nurses and a housekeeper.

Over the next century, the hospital grew dramatically, adding a school of nursing in 1908, operating rooms, an emergency room, laboratory space and x-ray technology in the 1920s. By 1940, there were two hospitals in High Point that merged and became High Point Memorial Hospital. In 1950, a new 100-bed hospital was built and joined with the existing 80-bed hospital.

By the 1980s, the hospital had become a regional health care system, which was reflected in its name, High Point Regional Medical Center.

Today, High Point Medical Center's community roots remain strong and its single mission extends throughout its region: to improve the health of those in the communities it serves and to provide the best patient- and family-centered care in the region.

This year High Point Medical Center received a Leapfrog Safety Award "A" grade for its commitment to quality and safety in all aspects of patient care, was named as Watson Top 50 Cardiovascular Hospital for cardiac services as well as Healthgrades awards for patient safety in stroke, diabetes, pulmonary and spine surgery.

Recently, High Point Medical Center was named a national robotics surgery training center by Intuitive Surgical, the maker of da Vinci robotic surgical systems.



Lexington Medical Center is a 94-bed acute care hospital located in Lexington, NC, that serves residents in the community and Davidson County. The medical center provides a wide range of patient- and family-centered care and specialty services that include orthopaedic, ENT/head and neck and general surgery, cancer care, digestive health services, a state-of-the-art rehabilitation department, and centers for diagnostic imaging and wound care.

As part of Wake Forest Baptist Health, Lexington Medical Center has the resources of a nationally recognized academic medical center, which enables the facility to offer world-class health care close to home. The Lexington campus has 14 Wake Forest Baptist clinics including pediatrics, family medicine and adult specialty clinics offering women's services, cardiology and orthopaedic care.

Lexington Medical Center and its predecessor organizations have provided health care services in Davidson County since 1924 when a four-story, 80-bed hospital was built and operated by Dr. J.A. Smith. In the years that followed, the community experienced rapid growth and quickly outgrew Dr. Smith's facility. In 1946, the community raised funds for the construction of Lexington Memorial Hospital on Weaver Drive. This new location served the community into the late 1970s when the daily inpatient census frequently exceeded capacity and it was time to expand again. By 1977, a community campaign was launched and more than \$1.5 million was raised toward the total \$7.5 million needed to construct the new facility on the outskirts of Lexington. Land was purchased and construction began for a one-story, 100-bed facility that was completed in September 1979. Over its 40-year history, many improvements and expansions have been made but none as expansive as the Surgical Services facility that opened in September 2019. This \$31.5 million addition includes state-of-the-art operating rooms, post-operative recovery bays, a cystoscopy suite for urology procedures, and expanded family waiting area and consult rooms.

This year Lexington Medical Center received a Leapfrog Safety Award "A" grade for its commitment to quality and safety in all aspects of patient care.







### WILKES MEDICAL CENTER

Wake Forest Baptist Health Wilkes Medical Center is a 130-bed acute care hospital located in North Wilkesboro, NC, that has served residents of the community and Wilkes County for more than 60 years. The medical center includes a 10-bed skilled nursing unit. Wilkes Medical Center provides a wide range of patient- and family-centered health care services including specialties such as 24/7 emergency care, cardiology, heart and pulmonary rehabilitation, dialysis, full-service lab, endoscopy/gastroenterology, ENT/head and neck surgery for adults and children, hematology and oncology, imaging and 3D mammography, neurology, obstetrics and gynecology, ophthalmology, orthopaedics/spine, pharmacy and primary care, rehabilitation services, urgent care, urology and wound care.

As a part of the Wake Forest Baptist family, Wilkes Medical Center offers the resources of a nationally recognized academic medical center, enabling the facility to provide world-class health care in the community, close to home. Our mission is to promote the health of our region by being an exceptional and compassionate provider of care.

Wilkes General Hospital opened on May 1, 1952 on land donated by Dr. Frederick C. Hubbard, a local surgeon. Dr. Hubbard had been key in building the first county hospital, Wilkes Hospital, in North Wilkesboro which opened in 1923. At that time, Hubbard decided a hospital would be a good service to the community and the surrounding counties as there were no hospitals in the vicinity. In the 1950s, Wilkes Hospital's Board of Directors and owners, led by Dr. Hubbard, proposed construction of a new hospital at another location, which became Wilkes General Hospital and later, Wilkes Medical Center. This year Wilkes Medical Center brought two new services to North Wilkesboro, a Hematology and Oncology clinic and a mobile PET scan unit that provides imaging bi-weekly.

Wilkes Medical Center was also recognized for its patient safety record this year, and received an "A" grade from Leapfrog for its commitment to quality and safety in all aspects of patient care.



### **EXECUTIVE LEADERSHIP**

#### Julie Ann Freischlag, MD, FACS, FRCSEd(Hon), DFSVS

Chief Executive Officer, Wake Forest Baptist Health Dean, Wake Forest School of Medicine Chief Academic Officer, Atrium Health Enterprise

**Kevin P. High, MD, MS** President, Health System – Wake Forest Baptist Health President, North Central/Western NC Region – Atrium Health

**Todd M. Bankhead, MBA, MPA** Senior Vice President, Clinical Operations and Chief Operating Officer, Clinical Service Lines

**Chad J. Brown, FACHE** President, Davie Medical Center – Wake Forest Baptist Health President, Wilkes Medical Center – Wake Forest Baptist Health

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**A. Mickey "Mick" Fisher, MA** Senior Vice President and Chief Human Resources Officer

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Senior Vice President and Associate Dean, Clinical and Academic Network Development President, High Point Medical Center – Wake Forest Baptist Health

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Karen Hart Huey Vice President, Facilities

William B. "Bill" James, MHA, FACHE President, Lexington Medical Center – Wake Forest Baptist Health

Yates D. Lackey Vice President and Chief Audit and Compliance Officer

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Joanne C. Ruhland, MBA Vice President, Government Relations

William D. Showalter, MPA, MURP Senior Vice President and Chief Information Officer

### Alisa L. Starbuck, DNP, APRN, NNP-BC, NEA-BC

President, Brenner Children's Hospital and Vice President, Women's and Children's Health Services

**Michael T. Waid, MBA** Senior Vice President, Health System Operations and Integration

J. McLain Wallace Jr., JD Senior Vice President and General Counsel

**Cathleen M. Wheatley, DNP, RN, CENP** President, Wake Forest Baptist Medical Center Senior Vice President of Clinical Operations

**Terri S. Yates, PhD** Vice President and Associate Dean, Healthcare Education Administration

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"Progress in the scientific world is dependent on an attitude which says that everything is changing all the time. Institutions like this have the responsibility to make sure that new things are done...to push progress. And that responsibility... is to the public."

— Jesse Meredith, MD, 2002 Speaking at the Centennial of Wake Forest School of Medicine





Updated May 2021



### **WEBSITES**

- WakeHealth.edu
- School.WakeHealth.edu
- BrennerChildrens.org
- WakeForestInnovations.com
- WakeHealth.edu/Lexington
- WakeHealth.edu/Davie
- WakeHealth.edu/Wilkes
- WakeHealth.edu/HighPoint