facts and figures
Duke University School of Medicine

The youngest of the nation's leading medical schools, Duke University School of Medicine is one of the nation's premier schools for medical education, clinical care and biomedical research. Planning for the school began in 1925, when businessman James Buchanan Duke, benefactor of Duke University and The Duke Endowment, bequeathed $4 million to establish the Duke School of Medicine, the Duke School of Nursing and Duke Hospital. Less than five years after the school opened in 1930, the Association of American Medical Colleges ranked Duke in the top quarter of medical schools in the country. Now, more than 80 years later, the Duke University School of Medicine is still ranked among the leading medical schools in the nation. The School of Medicine employs more than 2,400 regular rank faculty physicians and researchers. The School of Medicine, Duke University Health System, School of Nursing, and the Private Diagnostic Clinic (PDC) comprise Duke Health.

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Duke surgeon J. Deryl Hart, MD, introduces ultraviolet lamps into operating rooms to kill airborne germs that cause post-operative staph infections, dramatically reducing the number of infections and related deaths.

Duke pediatrician, Jay Arena, MD, leads the push for drug companies to develop the child-proof safety cap for medicine bottles.

Robert Lefkowitz, MD, professor of medicine and a Howard Hughes Medical Institute investigator, has spent his entire 45-year research career at Duke. In 2012, he was awarded the Nobel Prize in Chemistry with Brian K. Kobilka, MD, of Stanford University School of Medicine, who was a post-doctoral fellow in Dr. Lefkowitz’s lab in the 1980s. They were recognized for their work on a class of cell surface receptors that have become the target of prescription drugs, including antihistamines, ulcer drugs and beta blockers to relieve hypertension, angina and coronary disease.

Paul Modrich, PhD, professor of biochemistry and a Howard Hughes Medical Institute investigator, was awarded the Nobel Prize in Chemistry in 2015 along with Tomas Lindahl, MD, PhD, of the Francis Crick Institute and Clare Hall Laboratory in the UK, and Aziz Sancar, MD, PhD, of University of North Carolina at Chapel Hill, for mechanistic studies of DNA repair. The trio was honored for mapping, at a molecular level, how cells repair damaged DNA and safeguard the genetic information. According to the Nobel Foundation, their work has provided fundamental knowledge of how a living cell functions and is used, for example, for the development of new cancer treatments.

There are MD Alumni residing in all 50 states. Shown: red 1000+, green 500+, orange 200+, blue 100+, purple 1-100.

**Historical Highlights**

**1936**
Duke surgeon J. Deryl Hart, MD, introduces ultraviolet lamps into operating rooms to kill airborne germs that cause post-operative staph infections, dramatically reducing the number of infections and related deaths.

**1950**
Duke pediatrician, Jay Arena, MD, leads the push for drug companies to develop the child-proof safety cap for medicine bottles.

**1959**
Duke becomes the first to use systemic hypothermia during cardiac surgery. This technique of cooling patients to minimize tissue damage during lengthy surgical procedures is now standard practice worldwide.
The School of Medicine includes the research efforts of basic and clinical faculty members in 39 departments, centers, institutes and initiatives. Their combined efforts make Duke one of the largest biomedical research enterprises in the country, with nearly $757 million in sponsored research expenditures annually.

During Fiscal Year 2018, nearly 21,000 patients participated in 1,022 active clinical research studies at Duke.

Translating Duke Health
The Translating Duke Health Initiative is a multi-disciplinary, multi-year commitment to harness the expertise and knowledge found at Duke to address society's most significant scientific and healthcare challenges and fulfill the vision of making discoveries and transforming health for millions of people.

Areas of Focus:
- Keeping the Heart Young
- Brain Resilience and Repair
- Ending Disease Where it Begins
- Controlling the Immune System
- Solid Tumor Brain Metastases

Duke Forge
Duke Forge is Duke University's new center for health data science. Located within the School of Medicine, the center unites experts from across the campus with interest and expertise in data science. Faculty, staff, and students create innovative approaches to fuse biostatistics and machine learning and implement insights gained into improving patient care and leveraging digital information to enable healthy living and disease prevention.

Duke Forge is led by Robert M. Califf, MD, vice chancellor for health data science and former FDA commissioner.

Duke Clinical and Translational Science Institute (CTSI)
DCTRI is the world's largest academic clinical research organization. The DCRI's more than 130 faculty and 1,200 staff conduct groundbreaking multi-national clinical trials, manage major national patient registries, and perform landmark outcomes research. The DCRI's mission is to develop and share knowledge that improves the care of patients through innovative clinical research. DCRI faculty have published more than 14,000 papers in peer-reviewed journals.

New Research Buildings
In 2018, the School of Medicine opened two new research facilities. The 155,000-square-foot Medical Sciences Research Building III will house bench lab research on Duke's campus. School of Medicine laboratories and offices from the Clinical and Translational Science Institute, Center for Genomics and Computational Biology, Robertson Research Lab, Marcus Center for Cellular Therapies, and the Children's Health and Discovery Initiative are in the newly-renovated Chesterfield Building in downtown Durham.

Duke researchers discover the enzyme superoxide dismutase, which protects all living things against the toxicity of oxygen.

 Pediatric immunologist Rebecca Buckley, MD, uses bone marrow transplantation to cure severe combined immunodeficiency, also known as “bubble boy disease.”

Duke becomes one of two hospitals to conduct the first human clinical trials of AZT, the first drug to substantially improve quality of life for AIDS patients.

Duke geneticists invent a three-minute test to screen newborns for over 30 metabolic diseases at once. Though devastating if undetected, the diseases can be controlled once identified. The test is now used throughout the country.

In 2018, the Duke Clinical & Translational Science Institute was awarded a five-year grant of more than $60 million from the National Institutes of Health (NIH) to advance innovative ideas from the point of discovery to implementation in clinical practice and population health. The Clinical and Translational Science Awards (CTSA) program, supported by the NIH's National Center for Advancing Translational Sciences, provides infrastructure for researchers at Duke to conduct clinical research, train young scientists and share developments across a consortium of more than 60 other leading centers throughout the world. Duke received one of the original 12 CTSA grants in 2006, with a previous renewal of $47 million in 2013.

Project Baseline
Duke has partnered with Verily, Google, and Stanford Medicine on Project Baseline, a major research initiative designed to help researchers better understand health, disease, and the transitions between them. Duke will enroll approximately 1,000 participants in the study, which is designed to develop a well-defined reference, or “baseline,” of good health, as well as a rich data platform that may be used to better understand the transition from health to disease. As a whole, the study will enroll approximately 10,000 people.
**Education**

The Duke University School of Medicine is a community of scholars devoted to teaching, research, and patient care. It is consistently ranked among the best in the country.

- Developed in the mid-1960s, the Duke University School of Medicine’s unique curriculum allows medical students to study the core basic sciences for one year instead of two, in order to devote the entire third year to a scholarly research project. Students at Duke care for patients a full year earlier than peers at most other medical schools. About 40 percent of Duke medical students graduate with a second degree, usually begun during the third year.

- A unique 4-year Primary Care Leadership Track trains leaders who can enter residency prepared to engage with communities to help improve health outcomes. The track builds on the longstanding partnership between Duke and the Durham community so students can understand causes of health disparities, create a strong research focus on community engagement, and learn how to redesign clinical programs to better serve the patient needs.

- The Longitudinal Integrated Clerkship (LIC) program allows students to learn the core skills of doctoring by following a large panel of patients longitudinally, over substantial time. Students see patients through all phases of diagnosis and treatment, including hospitalizations, discharge follow-up and even home visits.

- Approximately 16 percent of Duke medical students are enrolled in the Medical Scientist Training Program (MSTP), which culminates in both MD and PhD degrees. Established in 1966, Duke’s MSTP program, was the fourth MD/PhD program funded by the National Institutes of Health (NIH).

- In order to address a national shortage in physician scientists, Duke created a new Office for Physician-Scientist Development to coordinate efforts in the recruitment, development, mentorship, and retention of physician-scientists across career levels.

- The Doctor of Physical Therapy (DPT) Program is committed to producing the next generation of leaders in the field of physical therapy. This program is consistently ranked among the best training programs in the nation. It celebrated its 75th Anniversary in 2018.

- Established in 1965, the Physician Assistant Program at Duke is recognized as the birthplace of the PA profession. The program has been consistently ranked as one of the top programs in the nation, and is currently ranked No. 1 by U.S. News & World Report.

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**Students**

**2018 Entering Class (MD Program)**

- **129** Number of students
- **75/54** Women/Men
- **35/70** Underrepresented Minorities
- **3.84** Median Overall GPA
- **3.81** Median Science GPA
- **35** Median MCAT old
- **518** Median MCAT new

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**Number of Students:**

**Health Education Programs**

- **418** Doctor of Medicine (MD)
- **88** Medical Scientist Training Program (MD/PhD)
- **229** Doctor of Physical Therapy
- **177** Physician Assistant
- **91** Clinical Research Training Program
- **117** Master of Biostatistics
- **42** Master of Biomedical Science
- **81** Master of Management in Clinical Informatics
- **33** Master of Medical Physics
- **16** Pathology Assistant
- **2** Clinical Leadership Program
- **1** Ophthalmic Technician

**PhD Programs**

- **58** Biochemistry
- **16** Biostatistics
- **13** Cell and Molecular Biology
- **42** Cell Biology
- **11** Cognitive Neuroscience
- **27** Computational Biology and Bioinformatics
- **12** Developmental & Stem Cell Biology
- **37** Immunology
- **4** Integrated Toxicology & Environmental Health
- **24** Medical Physics
- **33** Molecular Cancer Biology
- **78** Molecular Genetics & Microbiology
- **65** Neurobiology
- **24** Pathology
- **43** Pharmacology
- **54** University Program in Genetics & Genomics

**Duke-NUS Medical School**

- **334** (MD, MD/PhD, and PhD students)

**Duke Kunshan**

- **41** (Master of Science in Medical Physics Program, Master of Science in Global Health Program)

**Residents and Fellows**

- **1,073** (Graduate Medical Education)

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**1993**

- Duke Comprehensive Cancer Center (now Duke Cancer Institute) develops the nation’s first outpatient bone marrow transplantation program.

**1994**

- Pediatric immunologist Louise Markert, MD, PhD, uses thymus transplantation to cure once-fatal complete DiGeorge Syndrome.

**1998**

- Duke researchers are the first to use magnetic resonance spectroscopy to track levels of n-acetylaspartate (N-CAA) as a marker for Alzheimer’s disease, proving that such a marker exists and that it can be detected.

**2003**

- Duke researchers demonstrate for the first time that magnetic resonance technology could be used to observe the effects of a medication on brain structures, an important first step toward improving drug research for treating Alzheimer’s disease.

**2005**

- Researchers at Duke and Vanderbilt universities discover the first major gene known to determine the first major gene known to determine an individual’s risk for developing age-related macular degeneration, the leading cause of visual impairment and legal blindness in the elderly.

**2006**

- The FDA approves Myozyme, the first lifesaving treatment for children with Pompe disease. The treatment was discovered and developed at Duke.
### Duke University Health System and Private Diagnostic Clinic (PDC)

#### Outpatient Visits
- Duke University Hospital: 1,087,262
- Duke Raleigh Hospital: 252,221
- Duke Regional Hospital: 195,071
- Duke Primary Care: 732,157

#### Inpatient Admissions (excludes newborns)
- Duke University Hospital: 42,916
- Duke Regional Hospital: 9,484
- Duke Raleigh Hospital: 16,299

#### Surgical Procedures (excludes endoscopies)
- Duke University Hospital: 41,081
- Duke Raleigh Hospital: 16,534
- Duke Regional Hospital: 15,317

#### Employees (full-time): 17,782 within Duke University Health System
- Duke University Hospital
- Duke Regional Hospital
- Duke Raleigh Hospital
- Duke HomeCare & Hospice
- Duke Primary Care
- Duke Health & Wellness

#### Employees (full-time): 1,675 in the Private Diagnostic Clinic

### Total figures for Duke University Health System

**Outpatient Visits**: 2,266,711
**Emergency Department Visits**: 186,239
**Patients transported by LifeFlight (excludes ground)**: 962
**Number of Surgical Cases (excludes endoscopies)**: 72,932
**Babies Delivered**: 5,677
**Cardiac Catheterizations (adult/pediatric/mobile)**: 8,339
**Open Heart Surgeries (adult/pediatric)**: 1,380
**Organ Transplant**
- Kidney: 166
- Lung: 108
- Heart: 82
- Liver: 105
- Pancreas, Intestine and multi-organ transplants: 8

*All data for fiscal year 2017*

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**Hai Yan, MD, PhD**, and a team of scientists from Duke and Johns Hopkins universities identify mutations in a gene that make cells immortal and appear to play a pivotal role in three of the most common types of brain tumors, as well as cancers of the liver, tongue and urinary tract.

**Bart Haynes, MD**, leads the world’s largest HIV vaccine trial, which provides important clues about immune system responses that could play a role in protecting people from HIV infection.

**Jeffery Lawson, MD, PhD**, and **Laura Niklason, MD, PhD**, develop a bioengineered blood vessel, which Lawson grafts into an artery in a patient’s arm, the first in-human procedure of its kind in the U.S.

**A mind-controlled robotic exoskeleton developed by Duke researcher Miguel Nicolelis, MD, PhD, is used by a paraplegic man to make a first kick at the Opening Ceremonies of the World Cup.**

**Duke celebrates the 25th anniversary of the creation of its heart transplant program. More than 1,000 patients have received new hearts through the program.**

**Duke researchers receive $15 million to support an innovative research program that explores the use of umbilical cord blood cells to treat autism, stroke, cerebral palsy and related brain disorders.**
As a world-class academic and health care system, Duke Health strives to transform medicine and health locally and globally through innovative scientific research, rapid translation of breakthrough discoveries, educating future clinical and scientific leaders, advocating and practicing evidence-based medicine to improve community health, and leading efforts to eliminate health inequalities. In fiscal year 2017, DUHS provided $509 million in charity care and other community benefit investments.

**Partnership for a Healthy Durham** is a coalition of local agencies and communities with the goal of collaboratively improving the physical, mental, and social health and well-being of Durham residents. The Duke University School of Medicine, along with multiple other Duke centers, institutes, and programs, is an active partner of the coalition. The program is housed in the Durham County Department of Public Health and focuses on six health priorities: obesity and chronic illness; access to medical and dental care; mental health and substance abuse; HIV and sexually transmitted infections; poverty; and education.

**The City of Medicine Academy** is a unique high school in Durham that provides students with a challenging academic program while providing them with a broad overview of health professions and potential careers in medicine, science, and research. Resources across Duke University, the School of Medicine, and the Health System help maximize the student’s learning experience through summer internships, field trips, and after school programs. Duke University School of Medicine and Health System faculty, staff, and students lend their expertise to projects and classroom lectures.

**Duke Clinical and Translational Science Institute’s (CTSI) Community Engagement Core** connects Duke researchers with the community to educate individuals about research and to increase engagement in research and health improvement activities. Last year, Duke partnered with 38 Durham partners to host 67 community events. Community services include patient and community advisors, population health improvement awards, and an e-library for community and research resources.

**The Academic Success Through Surgical Education and Training (ASSET) program** is a partnership between the School of Medicine’s Department of Surgery and the Durham Nativity School. Through the program, faculty members in the Department of Surgery train and mentor students. This program aims to foster high achievement in science through surgical education for financially disadvantaged students.

### Duke in Durham

The city of Durham, North Carolina, is also known as the “City of Medicine,” because healthcare and health-related services are a primary local industry. Nearly one third of people in Durham are employed in a health-related field at one of more than 300 local businesses, organizations, and practices.

The School of Medicine leases more than 600,000 square feet in nearly 40 different buildings around the city, making faculty, staff, and students integral parts of the city’s vibrant community and adding to the city’s bustling economy. Additionally, more than 7,000 Duke-trained healthcare professionals live and work in Durham and throughout the state of North Carolina.

### Highlights from 2015 to 2018

- **2015**: The FDA awards Duke “breakthrough therapy designation” for a poliovirus therapy for glioblastoma. The therapy was developed and is being tested by researchers at Duke’s Preston Robert Tisch Brain Tumor Center.
- **2016**: A Duke team, led by Linda Cendales, MD, performs the first hand transplant in NC, attaching the limb to a 54-year-old patient from Laredo, Texas, whose hand was severed in a childhood accident.
- **2018**: A Duke team led by Peter E. Fecci, MD, PhD, finds missing immune cells that could fight lethal brain tumors. The missing T-cells in glioblastoma patients were found in abundance in the bone marrow.
- **2018**: Duke researchers, led by Diego Bohórquez, PhD, discover a new set of pathways that allow gut cells to rapidly communicate with the brain.
Duke students and faculty have numerous opportunities to study and learn all over the world. The School of Medicine’s three main international programs are the Duke-National University of Singapore Medical School (Duke-NUS), Duke Kunshan University, and the Duke Global Health Institute.

**Duke-NUS**

Duke-NUS is Singapore’s first and only U.S.-style graduate medical school, combining the unique medical education curriculum at Duke with the academic rigor and rich resources offered by NUS. It offers students an enriching and innovative educational experience. Graduates of the Doctor of Medicine (MD) program are awarded a joint MD degree by Duke and NUS.

Through the MD program, PhD program, and MD/PhD track, Duke-NUS prepares doctors who will be well equipped to practice in the rapidly changing world of medicine, as well as play increasingly critical roles in translating meaningful scientific discoveries into quality innovations in patient care.

**Duke Kunshan University**

Duke Kunshan University, a Sino-American partnership of Duke University and Wuhan University in China, provides an international educational experience within a close-knit community of students and faculty from various fields. Duke Kunshan offers academic programs and research opportunities for medical students and researchers, in the Master of Science in Medical Physics Program, Master of Science in Global Health Program and Global Health Research Center.

**Duke Global Health Institute (DGHI)**

Formed in 2006 as part of Duke University’s commitment to spark innovation in global health research and education, DGHI brings together knowledge and resources from across the university and Duke Health to address the most important global health issues of our time. Around the world, DGHI faculty, staff and students are engaged in research projects that reflect the changing global burden of disease and the many factors that influence human health.

A defining characteristic of all DGHI research is its interdisciplinary approach, drawing on the most innovative ideas from medicine, genetics, epidemiology, engineering, environmental and social sciences, public policy, the humanities and beyond to design new strategies to overcome global health challenges. DGHI also offers a comprehensive portfolio of global health education programs, including an undergraduate major and minor in global health, a Master of Science in Global Health, and doctoral scholars and certificate programs.

**By the numbers:**

- 86 core and 53 affiliate faculty members
- 214 active research grants
- $61 million in annual external research funding
- 49 percent of the DGHI faculty members are from the School of Medicine

**Priority Partnership Locations**

DGHI has active research and education programs in more than 40 countries, including the United States. There are 12 priority locations, where DGHI faculty and students work collaboratively with longstanding local partners.

- Beijing, China
- Kunshan, China
- Shanghai, China
- Leogane, Haiti
- Delhi, India
- Eldoret, Kenya
- Lima, Peru
- Singapore
- Galle, Sri Lanka
- Cape Town, South Africa
- Moshi, Tanzania
- Kampala, Uganda
Core Values

Excellence in education, research and patient care

Respect for and inclusion of people from all backgrounds

Commitment to service, solving real world problems

Sense of urgency in transforming discoveries into improved human health