

musc.edu | musc.edu/research | muschealth.org | musckids.org | hollingscancercenter.org



ABOUT MUSC

David J. Cole. M.D., FACS President, Medical University of South Carolina

The Medical University of South Carolina (MUSC) is South Carolina's only comprehensive academic health sciences center. Our purpose is to preserve and optimize human life in South Carolina through our vision to lead health innovation for the lives we touch. MUSC provides an interprofessional environment for learning, discovery and healing through our tripartite mission of education, research and patient care.

Founded in 1824 as the first medical institution in the southern United States, MUSC's main campus is located on more than 50 acres in the city of Charleston. Since its founding, the university has awarded nearly 39,000 degrees and grown from a small medical school to the state's only integrated academic health sciences center. Comprised of a teaching hospital and six colleges more than 1,800 faculty members educate and train approximately 3,000 students and 800 residents annually. As the largest nonfederal employer in Charleston, the university and its affiliates have collective annual budgets exceeding \$3.2 billion, with annual research funding in excess of \$271 million.

Since 2018, MUSC has established value-based health care partnerships with companies such as Siemens Healthineers and Medtronic to improve health outcomes in a cost-effective manner. MUSC also entered into affiliations agreements with hospitals throughout South Carolina that primarily provide care to rural and underserved populations. This, coupled with an expanding telehealth network, allows MUSC to provide lifesaving care to more South Carolinians than ever before.

Chartered in 1966, the MUSC Foundation is an independent charitable education foundation dedicated to supporting MUSC and its tripartite mission. Over its more than 50 years, the foundation has fully leveraged its assets, now more than \$600 million, to invest, manage and disperse private resources that help meet priority but unfunded university initiatives.

LEADERSHIP



David J. Cole, M.D., FACS President, MUSC





Kate Azizi Vice President for Institutional Advancement

Annette R. Drachman, MHA, J.D. General Counsel





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Eugene S. Hong, M.D. Chief Physician Executive, MUSC Health and MUSC Physicians





Caroline Brown, MBA Chief External Affairs Officer

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Willette Burnham-Williams, Ph.D. Chief Equity Officer

Lisa P. Montgomery, MHA Executive Vice President, Finance and Operations





Patrick J. Cawley, M.D., MHM, FACHE Chief Executive Officer, MUSC Health and Vice President for Health Affairs, University

Lisa K. Saladin, PT, Ph.D. Executive Vice President for Academic Affairs and Provost













GROWTH AND IMPACT

CLINICAL LOCATIONS

- Beaufort
- Charleston
- Chester
- Columbia
- Daniel Island
- Florence
- Fort Mill
- Goose Creek
- Greenville
- Indian Land
- Lancaster
- Mount Pleasant
- Mullins
- Murrells Inlet
- Myrtle Beach
- North Charleston
- Orangeburg
- Pawleys Island
- Seabrook Island
- Summerville

RESEARCH LOCATIONS

- Charleston
- Clemson
- Columbia
- Greenville
- Myrtle Beach



- Orangeburg
- **Pickens**

TELEHEALTH-CONNECTED COUNTIES

- Abbeville
- Aiken
- Allendale
- Anderson
- Bamberg
- Barnwell
- Beaufort
- Berkeley
- Calhoun
- Charleston
- Cherokee

- Chester
- Chesterfield
- Clarendon
- Colleton
- Darlington
- Dillon
- Dorchester
- Edgefield
- Fairfield
- Florence
- Georgetown

- Greenville
- Greenwood
- Hampton
- Horry
- Jasper
- Kershaw
- Lancaster
- Laurens
- Lee
- Lexington
- Marion

- Marlboro
- McCormick
- Orangeburg
- Pickens
- Richland
- Saluda
- Spartanburg
- Sumter
- Union
- Williamsburg
- York

MUSC Health — Charleston Region

The MUSC Health University Medical Center is located in historic downtown Charleston, South Carolina. It is a nationally recognized and leading health sciences university comprising four hospitals; the Institute of Psychiatry, Shawn Jenkins Children's Hospital and Pearl Tourville Women's Pavilion, Ashley River Tower and University Hospital plus the MUSC Hollings Cancer Center, an NCI-designated cancer center.

Other area locations include the R. Keith Summey Medical Pavilion, West Ashley Medical Pavilion, East Cooper Medical Pavilion and several other satellite locations, with plans for more.

MUSC Health — Florence and Marion Division

MUSC Health Florence Medical Center is a leading regional acute care facility that comprises of 396 patient beds and health care experts who provide care in all major specialties. This hospital is home to the first chest pain center in the region to have been accredited by the Society of Cardiovascular Patient Care and a primary stroke center that has been recognized by the Joint Commission.

MUSC Health Marion Medical Center is a 124-bed acute care facility that provides inpatient, outpatient, diagnostic, medical, surgical and emergency care. It is Joint Commission-accredited and includes Mullins Nursing Center, a 92-bed long-term care facility. These two facilities are dedicated to serving the health care needs of people living in the eastern area of South Carolina.

MUSC Health — Lancaster and Chester Division

MUSC Health Lancaster Medical Center is a 225-bed private-room facility. It is an Accredited Chest Pain Center, as designated by the American College of Cardiology, and a Joint Commission-designated Primary Stroke Center. These accreditations demonstrate Lancaster Medical Center's commitment to achieving the highest standards in the country in the areas of stroke and cardiac care.

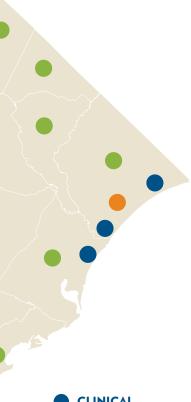
As the only hospital in Chester County, MUSC Health Chester Medical Center offers an intimate and hospitable experience in its 82-bed facility where close-knit teams of health care providers serve their local community.

Affiliates

The MUSC Health Affiliation Network extends MUSC Health's mission through the building of meaningful relationships locally, regionally and globally. This network continues to expand and currently includes:

- Beaufort Memorial
- > Carolina Pines
- Hampton Regional
- > Kershaw Health

- Lake City
- > Tidelands Health
- > The Regional Medical Center in Orangeburg
- Williamsburg Regional



CLINICAL LOCATIONS

RESEARCH LOCATIONS

TELEHEATH-CONNECTED **COUNTIES**



Sarandeep Huja, D.D.S., Ph.D. Dean, James B. Edwards College of Dental Medicine

Paula Traktman, Ph.D. Dean, College of Graduate Studies





Zoher Kapasi, PT, Ph.D., MBA Dean, College of Health Professions

Raymond N. DuBois, M.D., Ph.D. Dean, College of Medicine





Linda S. Weglicki, Ph.D., R.N. Dean, College of Nursing

Philip Hall, Pharm.D. Dean, College of Pharmacy



SIX COLLEGES - ONE UNIVERSITY

Counting all MUSC graduates from June 1, 2018, through May 18, 2019, 967 students earned MUSC health care degrees. Since being established in 1824, more than 39,000 degrees have been conferred.

The Medical University of South Carolina is home to six colleges, more than 3,000 students, more than 800 residents and a diverse student body, staff and faculty. The colleges of Dental Medicine, Graduate Studies, Health Professions, Medicine, Nursing and Pharmacy comprise the education arm of MUSC. Students earn degrees at the baccalaureate, master's, doctoral and other professional levels.



9.269

Applications processed



\$121 M+

Financial aid awards to MUSC students



1,248

Full-time faculty members 555

Part-time faculty members



Residency training opportunities for graduatelevel health professionals



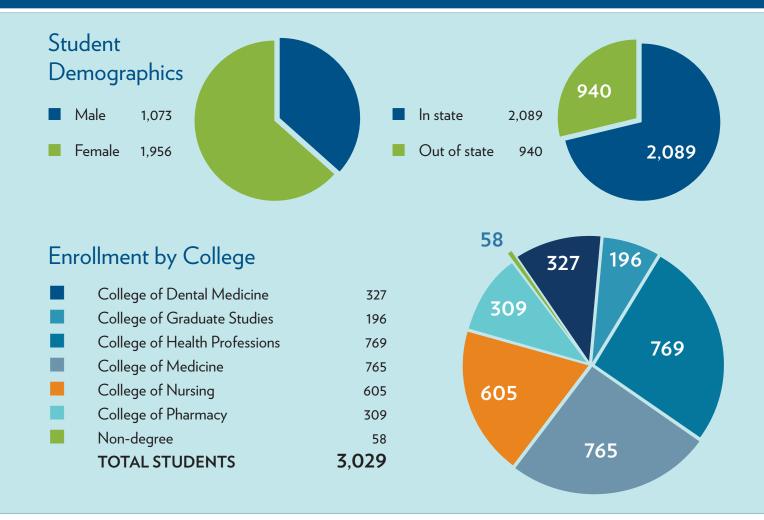
17,929

Hours of studentvolunteer service to local organizations



59%

Of all living alumni remain in state and contribute to the state's economy



James B. Edwards College of Dental Medicine

- > Founded in 1967, this is the state's only college of dental medicine. Students are trained in oral health sciences, oral rehabilitation, oral and maxillofacial surgery, pediatric dentistry, orthodontics and stomatology.
- Residency programs are offered in endodontics, general dentistry, orthodontics, oral surgery, pediatric dentistry and periodontics.
- Due to being a national leader in digital dentistry, a digital dentistry fellowship program was created in 2020.
- The National Institutes of Health (NIH) National Institute of Dental and Craniofacial Research supported the MUSC Dental Research training grant to facilitate oral health research training and a training program with a dual D.M.D./Ph.D. component. MUSC is one of 15 dental schools to offer this program.
- Students may participate in training and clinical programs throughout the state and provide care in seven outreach clinics across S.C.



Students accepted



College of Graduate Studies

- Founded in 1965, the College of Graduate Studies educates highly sought-after biomedical and behavioral scientists at master's, doctoral and postdoctoral levels.
- Students are exposed to innovative research through collaborative programs including MS or Ph.D. degrees in biomedical sciences, an NIH-funded Medical Scientist Training Program M.D./Ph.D. with the College of Medicine, a D.M.D./Ph.D. program with the College of Dental Medicine and a Pharm.D./Ph.D. program with the College of Pharmacy.



1.813

College of Graduate Studies alumni utilizing advanced degrees as leaders in academia, government and research

- The Summer Undergraduate Research Program (SURP) offers undergraduate students the opportunity to work closely with faculty members on biomedical research projects.
- Students underrepresented in the sciences may participate in research opportunities such as the NIH-funded Post-baccalaureate Research Education Program (PREP).
- A new certificate course has been established, Entrepreneurship in the Biomedical Space, which will help researchers learn how to put into action the knowledge arising from scientific discoveries.

College of Health Professions

- Founded in 1966, the College of Health Professions offers 11 programs that are ranked in the top in the U.S. for residential and online/hybrid formats.
- The following programs are highly ranked by U.S. News & World Report: Master in Occupational Therapy is 13th, Health Administration is 20th, Physical Therapy is 20th, Nurse Anesthesia is 29th.
- The college recently introduced a new Master of Science in Speech-Language Pathology. The first cohort is to begin in fall 2021.
- The school is ranked 8th in NIH funding among 65 colleges of health professions.
- In 2020, the college was awarded a \$3.25 million Health Resources and Service Administration grant to provide \$650,000 in scholarships per year over the next five years to occupational therapy students.

College of Medicine

- Founded in 1824, the College of Medicine was the first medical school in the southern U.S. and the 10th medical school in the nation. It is the largest medical school in the state, educating and training the majority of its physicians.
- The college awarded more than \$250 million through more than 1,100 awards for extramural research funding in FY 2019.



Underrepresented minority students in the current student body, up from 5.3% five years ago



- In FY 2019, the College of Medicine had a 6% increase in NIH funding and ranked 22nd among public institutions for NIH funding.
- The college's clinical faculty members support MUSC's clinical operations through MUSC Health. By way of the 18 clinical departments, faculty members and other clinical staff provide inpatient and outpatient care at MUSC's main campus and satellite locations.
- A national leader on many fronts, the college boasts a diverse student body

 21% versus the 15% national average. The American Association of Medical
 Colleges ranks the college in the 96th percentile for the percentage of
 graduates who are Black or African American.
- > Twelve percent of all residents and fellows in the college are considered underrepresented in medicine, the largest number in the college's history.
- > The M.D. curriculum incorporates a structured sequence of interprofessional education to prepare students for real-world practice. This includes a service-learning/community-service model, incorporating activities that teach students about social determinants and disparities.
- More than 9,300 alumni throughout the state, country and beyond.

/5
ACGME-accredited programs



97%
Residency match rate for COM students in 2020

College of Nursing

- The College of Nursing offers baccalaureate, master's and doctoral degrees and matriculates more DNP and Ph.D. students than any other nursing school in the state.
- The College of Nursing offers the country's only Doctor of Nursing Practice degree with a palliative care concentration.
- U.S. News & World Report has ranked the College of Nursing's online Family Nurse Practitioner online program as No. 5 in the country.

%

600+

Students educated by the College of Nursing each year

College of Pharmacy

- Founded in 1881, the College of Pharmacy is home to two research centers with renowned endowed chairs. This college boasts one of the oldest and largest residency programs in the country, having trained approximately 500 residents during its long history.
- > The Class of 2018 had the highest Phase I residency match rating in the country. The Class of 2019 had the nation's 15th highest pass rate on the pharmacy boards. The Class of 2020 had a match rate of 75%.
- > The 2021 U.S. News & World Report rankings listed the MUSC College of Pharmacy in the top 25% 31st out of the 134 schools listed, 144 total in the U.S.



96%

Employment within six months of College of Pharmacy graduation





70+

Start-up companies



429

Studies related to health disparities



587

Ongoing clinical trials



Domestic and international patents



1,276

Extramurally funded grants

MUSC RESEARCH

MUSC leads the state in biomedical research funding with a record \$284.6+ million in extramural grant funding, with some \$135+ million in grant funding from the NIH. The Medical University is home to one of only 60 Clinical and Translational Science Award (CTSA) hubs in the nation and the state's only NCI-designated cancer center.

The CTSA program supports the university's ability to translate scientific discovery into innovative and beneficial health care treatments, medicines and devices and is a catalyst in reshaping biomedical research in South Carolina.

Key areas of research at MUSC include cancer, addiction sciences, drug discovery, health disparities, inflammation and fibrosis, neuroscience, oral health, rehabilitation and stroke.



Recent Research Highlights

- As a national emerging leader in digestive and liver disease, MUSC was awarded \$16.5 million in NIH funding to open two new integrated centers: the Digestive Disease Research Core Center, supporting the research of established scholars, and the Center for Biomedical Research Excellence in Digestive and Liver Disease, which mentors early-career investigators working to become independent scholars.
- MUSC researchers and the MUSC Foundation for Research Development were awarded a patent on a nanoparticle that delivers antirejection drugs directly to a transplanted organ, allowing the rest of the body's immune system to protect against infection and disease.
- An \$8 million 5-year grant was awarded from the National Institute of Minority Health and Health Disparities to establish the Transdisciplinary Collaborative Center in Precision Medicine and Minority Men's Health at MUSC. As the focus of the work, doctors select treatments that are most likely to help patients based on a genetic understanding of their diseases.
- A study is being developed to test a way to reach and treat people misusing opioids by starting treatment while they are hospitalized for conditions linked to drug use. This data underscores the necessity of integrating infectious disease experts into treatment plans. The \$5.5 million, five-year study involves researchers from Columbia University and the University of South Carolina School of Medicine-Greenville.
- The National Center of Neuromodulation for Rehabilitation within MUSC's College of Health Professions has been named the national coordinating center for the Medical Rehabilitation Research Resource Network. The network focuses on research to help individuals rehabilitate their bodies and participate more fully in life.
- The NCI awarded a \$3 million grant to Hollings Cancer Center's immunotherapy research team to advance work on a novel immunotherapy combination to treat lung cancer.
- MUSC received a \$10 million grant from the National Institute on Drug Abuse to create the Center for Opioid and Cocaine Addiction to research opioid and psychostimulant addiction.



MUSC HEALTH

MUSC Health, the clinical enterprise of the Medical University of South Carolina, is dedicated to the pursuit of changing what's possible in health care.

This innovative integrated health care system includes four hospitals in downtown Charleston, more than 100 outreach locations, clinical affiliations with other hospitals and health systems and a robust telehealth network.

The MUSC Health University Medical Center has been named South Carolina's #1 hospital by U.S. News & World Report for six years in a row and most preferred hospital by the National Research Corporation.

In 2020, U.S. News & World Report ranked three MUSC Health Charleston specialties among the best in the country: ear, nose and throat; gynecology; and cancer. Six programs at MUSC Health Charleston and two each at MUSC Health Florence and MUSC Health Lancaster medical centers were designated as high performing.



South Carolina's only transplant program



the Tri-county area



100 **Outreach locations**



900+ Attending physicians



1,600

Beds throughout the health system



100+

Services offered via telehealth throughout South Carolina

1 Million+

Patient encounters each year

54,000+

Annual patient admissions



MUSC Children's Health

- MUSC Children's Health is South Carolina's most comprehensive system of preventive and clinical care, delivering evidence-based pediatric health services from the fetal stage through the teen years.
- Four pediatric specialties cardiology and heart surgery, cancer, nephrology and gastroenterology and GI surgery – are ranked in the top 50 in the country by U.S. News & World Report for 2020-2021.
- As the state's only nationally recognized children's hospital, MUSC Children's Health is expanding access to specialized pediatric care through a growing network of outreach locations across the state, as well as through the South Carolina Telehealth Alliance.
- In 2020, the MUSC Shawn Jenkins Children's Hospital and Pearl Tourville Women's Pavilion opened. This state-of-the-art building transforms how care is delivered, seamlessly integrating pediatric care with obstetrical services by combining the latest technological advances, intentional patient- and familycentered design and excellence in medicine.
- With the opening of the MUSC Shawn Jenkins Children's Hospital, MUSC Children's Health now offers 250 licensed beds. More than 80 of these are found in the neonatal intensive care unit, the largest in the state.

MUSC Hollings Cancer Center (HCC)

- HCC is one of 71 National Cancer Institute (NCI)-designated cancer centers and the only one in South Carolina. It is the largest academic-based cancer research program in the state.
- HCC comprises more than 100 faculty cancer scientists with an annual research funding portfolio of more than \$44 million and a dedication to reducing the cancer burden in our state and beyond.
- An interprofessional team of more than 60 specialists works collaboratively to offer state-of-the-art diagnostic capabilities, surgical techniques and therapies, including more than 220 clinical trials.
- HCC is expanding its reach across the state through prevention and screening initiatives, outreach and education programs and a growing list of cancer care locations and community partnerships.
- In 2020, U.S. News & World Report ranked HCC one of the top 40 cancer care providers.



MUSC Neurosciences

- Ranking first in the Southeast and second in the country in NIH neuroscience research funding, the MUSC Department of Neuroscience pairs researchers and clinicians at each other's sides in an effort to realize the clinical promise of cutting-edge research.
- MUSC is the first Joint Commission Certified Comprehensive Stroke Center in South Carolina; has a dedicated Neurosciences intensive care unit; is the state's only Parkinson's Foundation Center of Excellence; and is South Carolina's first Level 4 Epilepsy Center, the highest designation given.
- The MUSC Health Teleneuroscience Program partners with 34 hospitals to offer teleneurology and telestroke care, placing 96% of South Carolinians within 30 minutes of 24/7 emergent expert stroke care.
- MUSC is recognized as an ALS Certified Treatment Center of Excellence Program by the ALS Association.

MUSC Heart and Vascular Center (HVC)

- The MUSC Heart and Vascular Center offers the most heart disease treatment options in South Carolina and has performed 613 heart transplants since 1987.
- The center is a Blue Cross Center of Distinction for Heart Transplantation, an Optum Center of Excellence and a LifeTrac 'Select' Adult Heart Transplant Center.

PROVIDING CARE ACROSS THE STATE

MUSC's clinical outreach allows us to serve the citizens of our state, no matter where they are.



- HVC cardiologists and heart surgeons provide the highest level of specialization for all types of heart problems, including heart failure, heart valve problems, arrhythmias and interventional and surgical procedures. They treat complex cases with lower rates of complications and readmissions than national averages.
- As South Carolina's only medical research and training institution, MUSC offers more than 50 clinical trials of new drugs, devices and approaches to heart disease.
- As a trusted partner of international device makers in testing new devices, MUSC pioneers more devices than any other heart center in South Carolina.

MUSC Health Center for Telehealth

- The MUSC Center for Telehealth is leading the effort to expand telehealth services throughout South Carolina, offering increased access to quality medical services through technological advances.
- The center is a National Telehealth Center of Excellence, one of only two in the nation.
- The center provides over 100 telehealth services to nearly 350 sites across South Carolina. Care settings include 40 hospitals, over 80 schools and nearly 200 community clinics and other facilities.
- MUSC is the headquarters of the South Carolina Telehealth Alliance (SCTA), a network of organizations advancing telehealth throughout S.C. In 2019, the SCTA received the American Telemedicine Association's President's Award for Transformation of Healthcare Delivery in recognition of the SCTA's collaborative efforts.

From primary and specialty care to doctor's visits in schools via telemedicine, with numerous clinical and research affiliations across the region, we are leading health innovation for the lives we touch.

About MUSC

Founded in 1824 in Charleston, MUSC is home to the oldest medical school in the South as well as the state's only integrated academic health sciences center, with a unique charge to serve the state through education, research and patient care. Each year, MUSC educates and trains more than 3,000 students and nearly 800 residents in six colleges: Dental Medicine, Graduate Studies, Health Professions, Medicine, Nursing and Pharmacy. MUSC brought in more than \$271 million in biomedical research funds in fiscal year 2020, continuing to lead the state in obtaining National Institutes of Health funding, with more than \$129.9 million.

For information on academic programs, visit <u>musc.edu</u>.

As the clinical health system of the Medical University of South Carolina, MUSC Health is dedicated to delivering the highest quality patient care available while training generations of competent, compassionate health care providers to serve the people of South Carolina and beyond. Comprising some 1,600 beds, more than 100 outreach sites, the MUSC College of Medicine, the physicians' practice plan and nearly 275 telehealth locations, MUSC Health owns and operates eight hospitals situated in Charleston, Chester, Florence, Lancaster and Marion counties. In 2020, for the sixth consecutive year, U.S. News & World Report named MUSC Health the No. 1 hospital in South Carolina.

To learn more about clinical patient services, visit <u>muschealth.org</u>.

MUSC and its affiliates have collective annual budgets of \$3.2 billion. The more than 17,000 MUSC team members include world-class faculty, physicians, specialty providers and scientists who deliver groundbreaking education, research, technology and patient care.

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