



EMORY

WOODRUFF  
HEALTH  
SCIENCES  
CENTER

# Georgia on our minds

COMMUNITY BENEFITS REPORT | 2023



# KEY NUMBERS FY23



## PATIENT CARE

**11**

Hospital campuses

**544**

Outpatient locations

**2,811**

Licensed inpatient beds

**3,739**

Physicians

**323,144**

Emergency visits

**101,444**

Inpatient admissions

**9,466**

Births

**555**

Organ transplants

**525**

Bone marrow transplants



## RESEARCH

**\$1B**

Total grant funding

**\$44M**

Additional WHSC investment in research

**2,428**

Clinical trials

**70,351**

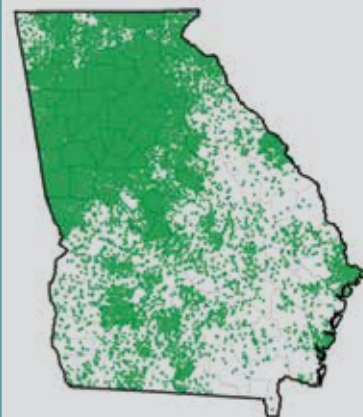
Clinical trial participants

**6,323,577**

outpatient/ambulatory encounters

**97%**

were Georgia residents  
One dot = 25 outpatient encounters



Figures for fiscal year ending August 31, 2023



## WORKFORCE

**34,710**

WHSC employees

**2,019**

Medical students/residents/fellows

**2,635**

Nursing and public health students

**927**

Emory physicians at Grady Hospital

**465**

Emory physicians at Children's Healthcare of Atlanta

**304**

Emory physicians at VA Atlanta Health Care

**\$31M**

Supplemental graduate medical education funded by Emory

## FROM THE EXECUTIVE VICE PRESIDENT

### Georgia on our minds

At Emory's Woodruff Health Sciences Center, we're honored to serve not only our metro-Atlanta community but also our neighbors in need throughout Georgia.

We provide millions of dollars in compassionate, innovative care to those who need it most throughout the city, the state, and the world. The \$579.4 million in community benefit that we provided in fiscal year 2023—including an estimated \$111.9 million in



indigent and catastrophic care provided by Emory Healthcare to patients who were unable to pay—made a lasting and tangible difference in the lives of many thousands of people. All told, our research, education, and health care missions have a \$14.8 billion economic impact on the community, in addition to the immeasurable value of providing help and hope to people in need.

Our gifted and selfless medical professionals provide high-quality care to the sickest and most grievously injured patients regardless of their ability to pay; our talented and compassionate students understand that sometimes doing the most good means meeting people at their point of need; and our brilliant and dedicated scientists

spearhead discoveries that shape how we understand, prevent, detect, and treat disease.

Our extraordinary team members feel both a passion and an obligation to provide care to everyone who turns to us in their time of need. Sometimes that service takes the form of uncompensated care for the uninsured and the underinsured; sometimes it means providing complex, comprehensive, and cutting-edge care for our community's most vulnerable; and sometimes it means working wherever the need exists anywhere across the state—because Georgia is *always* on our minds.

#### Ravi Thadhani, MD, MPH

Executive Vice President for Health Affairs, Emory University

Executive Director, Woodruff Health Sciences Center

Vice Chair, Emory Healthcare Board of Directors

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**On the cover:** Emory nursing, physician assistant, and physical therapy students provide care to migrant farmworkers in South Georgia each year. Photo Ann Borden

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#### Sustaining a vision for the community

Robert W. Woodruff—the health sciences center's namesake and longtime leader of The Coca-Cola Company—dedicated his life to supporting the community, and his legacy lives on in the work this report describes.



PHOTO STEPHEN NOWLAND

# Emory Healthcare community benefits

**Emory Healthcare provided a total of \$579.4 million in community benefits during fiscal year 2023, of which \$527.9 million was from hospitals and \$51.5 million was from non-hospitals.**

Emory Healthcare community benefits for hospitals totaled \$527.9 million. This number includes:

- Financial assistance and certain other community benefits at cost: \$383.9 million. This number, in turn, includes:
  - \$111.9 million in financial assistance, which includes (1) indigent care for patients with no health insurance, not even Medicaid or Medicare, and no resources of their own and (2) catastrophic care for patients who may have some coverage but for whom health care bills are so large that paying them would be permanently life shattering
  - \$62.8 million in Medicaid shortfall (difference in cost to provide care to Medicaid patients and Medicaid reimbursement)
  - \$209.2 million for other community benefits such as discounted/free prescription drug programs; in-kind donations to organizations such as Med Share; transportation services; blood drives; subsidized continuing care, nursing home care, and home care; sponsorship of selected health awareness events; and educational programs for the public, future professionals, and patients



PHOTO JACK KEARSE

- Medicare shortfall (difference in cost to provide care to Medicare patients and Medicare reimbursement): \$137 million
- Bad debt expense attributable to financial assistance: \$7 million

Emory Healthcare community benefits for non-hospitals, which includes the Emory Clinic and the Emory physician group practices, totaled \$51.5 million. This number includes: financial assistance, community health improvement services and community benefit operations, health professions education, and case and in-kind contributions for community benefits.



PHOTO ANN BORDEN

## Serving our Georgia community

At the Woodruff Health Sciences Center (WHSC), improving lives and providing hope extends beyond the walls of our hospitals, schools, and institutes. It reaches into the communities we serve through local partnerships, outreach activities, and novel programs to promote health, expand access, and deliver the best care in the communities we serve. Here are but a few examples of how WHSC delivers value to its communities.

### Caring for migrant farmworkers

WHSC operates two separate programs that provide free health care and assessments to Georgia migrant farm workers, one out of the Nell Hodgson Woodruff School of Nursing (SON) and the other out of the Physician Assistant program within the School of Medicine (SOM). Both programs provide free health care to farmworkers and their families in South Georgia, a population that plays a key role in Georgia's billion-dollar fruit and vegetable industry but often lacks access to even basic medical care.

The SON's Farm Worker Family Health program partners with the Georgia Ellenton Farmworker Health Clinic in Colquitt County, which hosts the state's largest H-2A temporary agricultural worker population. For two

weeks every summer, SON faculty and undergraduate and graduate students join students from the University of Georgia School of Pharmacy, Georgia State University and Brenau University Departments of Physical Therapy, and Clayton State University and Central Georgia Tech College Departments of Dental Hygiene to deliver health care to farm workers and their children. The trip is timed to coincide with the migrant summer school hosted by the county.

During the day, the program's team works at the school, providing comprehensive health assessments. "We service about 400 children during those two weeks," says Erin Ferranti, an SON cardiometabolic nurse researcher and educator. "We do dental, vision, hearing screenings, review their immunizations—basically everything that needs to

be done to fill out the forms necessary for the children to attend Georgia public schools."

Around 6 p.m., the team moves to one of the county's farms to set up a pop-up clinic outside the barracks where the workers reside. The buses carrying workers from the field generally arrive around 7 p.m., and for the next six hours, program staff provide basic health screenings and general health education. "It's an intense two weeks," says Ferranti. "We are in the field until about 1 a.m. every day, and we see about 1,000 farm workers during our time there."

This summer, the SON team will get a powerful boost with the addition of a state-of-the-art van equipped with an ultrasound machine, exam rooms, Wi-Fi technology, equipment necessary for blood work and, in the future, vaccine

administration. The van will operate out of the Ellenton clinic year round, staffed by SON nurse practitioner students.

The physician assistant's Emory Farmworker Project serves migrant workers at outdoor clinics on farms around Valdosta and Bainbridge for two weeks every June and another weekend in October. Emory PA students and faculty team up with volunteers from Emory schools of medicine and public health, Mercer University's PA program, the University of Georgia's College of Medicine and College of Pharmacy, Morehouse School of Medicine, the family therapy and nursing programs at Valdosta State University and Bainbridge State College, and the Haitian Culture Club at Florida State University.

The project provides care to more than 2,000 workers and their families each year in its pop-up clinics.

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### Addressing urban health disparities

The Emory Urban Health Initiative (UHI) focuses on providing resources to meet the needs of low-resourced

communities in the Atlanta area. The initiative, which is run by faculty from the schools of medicine, nursing, and public health, works with community organizations to develop sustainable and collaborative solutions for combating health disparities, offering a variety of programs, including, but not limited to:

**Atlanta Doula Connect.** Volunteer doulas are matched with expectant mothers to guide them through labor and delivery. The doulas provide continuous support, act as an extra set of eyes in monitoring the expectant mother's condition, and can serve as her advocate in a sometimes rushed and over-burdened health care setting. Studies have shown that having continuous support from a doula leads to improved outcomes for both mother and baby.

**Rolling Suitcase Drive.** People experiencing homelessness often carry their meager possessions in bags as they roam the streets or shuttle between day and night shelters. Since 2014, UHI has been gathering lightly used and new rolling suitcases and backpacks to distribute to this population.

**Cancer Detecting Dogs.** UHI and Grady Otolaryngology are working together to help improve access for underinsured patients in under-resourced Atlanta communities by using dogs that can detect cancer through smell.

**Tobacco Cessation.** This program provides Grady Hospital patients, employees, and community members with information and advice about the dangers of smoking and vaping. The program is designed to help smokers quit by addressing their behaviors, thoughts, and feelings, as well as assisting in developing a plan to quit.

**Sprouting Readers.** This garden-themed program for children in K-2nd grade is aimed at helping children develop a love of learning, and knowledge about food and nutrition. In coordination with local teachers, UHI members develop lessons that expand upon the topic of selected books, including hands-on activities.

### Interrupting the cycle of violence

More than 48,000 people die from gun-related injuries each year. Up to 40 percent of hospitalized patients with gun-shot wounds who initially survive are reinjured within five years. At the beginning of 2023, Emory trauma surgeon

Randi Smith launched the Interrupting Violence in Youth and Young Adults (IVYY) Project at Grady Memorial Hospital to interrupt that cycle.

Any gunshot victim between the ages of 14 to 34 who comes to Grady is met at bedside by one of IVYY’s “credible messengers”—people from the community who have lived experience of gun violence and who have been trained to provide trauma informed care. If the patient consents, the messenger takes advantage of the “golden moment,” working to build rapport with the patient and the family, assess the patient’s needs, and deal with any issues that may impede recovery.

Upon discharge, the patient visits an outpatient clinic staffed with trauma surgeons, mental health providers, wound care specialists, nurse practitioners, and even a lawyer. “We try to have a one-stop shop for our patients, so they can get all their needs met in one place,” says Smith.

The IVYY Project partners with more than 40 community-based organizations, including Emory’s Urban Health Initiative, DeKalb County Government, Atlanta Victim Assistance, and the Center for Civic Innovation’s Safety and Justice Fellows.

“We believe in a public health approach in which gun violence is understood as an epidemic and investing in the community is the primary cure,” says Jacquell Clemons Moore, the director of the IVYY Project.

That approach seems to be working. Of the more than 400 patients enrolled in the IVYY Project during its first year, only five have been re-hospitalized for gun-shot injuries. “At the IVYY Project, we believe violence prevention is not hard work, it’s heart work,” says Smith. “We are invested in providing love, support, and equitable care to the communities most impacted by firearm violence.”

### Healing veterans’ invisible wounds

There are more than five million post-9/11 veterans and active duty service members, many of whom are challenged by invisible wounds, such as PTSD, traumatic brain injury, substance use disorder, military sexual trauma, depression, anxiety, and related conditions. The Emory Healthcare Veterans Program (EHVP), now in its ninth year, has helped more than 3,000 warriors heal their invisible

wounds through effective and innovative holistic care.

EHVP is part of the Warrior Care Network, a group of four academic medical centers funded by the Wounded Warrior Project, that serve the mental health needs of post-9/11 veterans and service members regardless of their ability to pay. All treatment, transportation, food, lodging, and activities are provided at no cost to the warrior or their families.

The flagship treatment is a two-week intensive outpatient program that is individually tailored to each warrior’s particular needs. Treatment plans may include one-on-one and group therapy, sessions with sleep doctors, substance use relapse prevention courses, anger management, family counseling, and more. Warriors also benefit from a holistic wellness program that includes yoga, music therapy, art classes at the Michael C. Carlos Museum, and nutrition education.

Treatment at EHVP works. More than 90 percent of warriors graduate the intensive outpatient program and 75 percent of graduates see clinically significant improvements in their symptoms for PTSD and depression in just two weeks. “This program allows veterans to feel better faster and to get their lives back on track,” says Shaun Lewis, a veteran and lead veteran outreach coordinator at EHVP. “These two weeks can truly transform and even save veterans’ lives.”

### Reaching high school students

WHSC has several programs to help prepare high school students, many from disadvantaged backgrounds, for entry into health professions. These programs don’t just expose the students to the field, they provide real training that can enable them to join the workforce after high school or continue their education pursuing a degree in a health sciences field. Consider WHSC’s 10-year partnership with Cristo Rey Atlanta Jesuit High School, which educates young people of limited economic means with a rigorous college prep curriculum integrated with a relevant work study experience. In WHSC’s case, that relevant work experience is available at Emory Saint Joseph’s Hospital (ESJH)—a founding partner of the school—as well as Emory University Hospital, Emory University Hospital Midtown, and Emory Orthopaedics and Spine Hospital.



PHOTO MARKEITH HORACE

The Emory Healthcare Veterans Program has helped more than 3,000 warriors heal their invisible wounds through effective and holistic care.

Cristo Rey students spend four days a week in the classroom, and one day a week in the workplace. At ESJH, students have real world experience in the hospital. “Prior to their first workday, I get a profile on the students joining ESJH for the academic year. Our goal is to place students in a hospital department where they’ve expressed an interest in health care,” says Janice Brandt, senior coordinator of volunteer services for ESJH.

“For example, if a student is interested in nursing, they may be assigned to the admission recovery unit,” Brandt continues. “We have a student working in transportation, assisting hospital staff with patient wheelchair transportation. Other students have administrative duties: welcome patients as they arrive for procedures, assist with checking patients in for their appointment, answer the phone, and serve as a communication liaison between patients, family members, and the clinical team.”

The Emory Urban Health Initiative (see “Addressing urban health disparities,” page 5) runs the Health Careers Collaborative, which partners with the Benjamin E. Mays High School to encourage students to graduate through project-based learning with a focus on science and health care-related issues. Students are educated about the



Cristo Rey Atlanta Jesuit High School students find out where they are placed on Match Day. The four students above were placed with Emory Orthopaedics & Spine.

diverse range of health-related career pathways, empowered to identify the most pressing health needs in their community, and engaged in community-based health promotion activities.

Winship Cancer Institute’s Summer Scholars Research program gives high school students the opportunity to work one-on-one with a Winship physician or lab-based researcher and conduct research in a working lab or clinic setting. The goal is to encourage students to pursue cancer research.

For Summer Scholar 2023 participant Olivia Hardman, her experience with the program has convinced her to go to medical school. Besides working on their research projects, students participate in a variety of activities to enhance their scientific knowledge, learn about career paths, and gain additional exposure to the human side of cancer care. The 2023 curriculum included lab safety training; didactic lectures led by Winship faculty; panel discussions with cancer survivors and clinical fellows; field trips to the CDC, Emory Proton Therapy Center, and the new Winship Cancer Institute at Emory Midtown; and presentation skill-building sessions in preparation for the final symposium.

# Providing exemplary care throughout Georgia

Emory Healthcare is the most comprehensive academic health system in Georgia, including 11 hospitals, the Emory Clinic, and more than 425 provider locations.

Our hospitals are consistently recognized for the excellence and dedication of our providers and care teams. Emory University Hospital and Emory Saint Joseph's Hospital, for example, were ranked the No. 1 and No. 2 hospital in the state and in metro Atlanta respectively by *US News & World Report*. Our reach extends far beyond the borders of metro Atlanta through a joint venture at St. Francis–Emory Healthcare Hospital in Columbus, 10 regional affiliate hospitals, and our clinically integrated physician network. Here's a look at just some of the ways Emory Healthcare serves patients throughout the state.

## Putting Emory experts in rural ambulances

In Georgia's southern, primarily rural counties, people who need emergency medical care can access Emory doctors and specialists even before they reach a local hospital through an innovative telehealth initiative.

The Emory Rural Tele-EMS Network (ER-TEMS) is funded through the Health Resources and Services Administration and works with the South Georgia division of Grady EMS in cooperation with local rural hospitals.

"We know that early intervention saves lives. In rural Georgia, long distances required to reach a hospital contribute to worse medical outcomes in time-sensitive critical conditions like strokes, heart attacks, trauma, and complications during childbirth," says Michael Carr, the network's project director and an assistant professor of emergency medicine at Emory's School of Medicine. "This network aims to reduce those disparities."

Using video technology and high-speed internet connection, the network puts Emory emergency medicine professionals "in the ambulance" across remote parts of Georgia. Residents in those rural areas of the state suffer from high rates of chronic health conditions, placing them at increased risk of medical complications. Yet they are often far from the nearest hospital.

The ambulance crew can call the Emory emergency hub physician when a critical patient is identified or if

they need other clinical support. The Emory emergency physician receives patients' EKG readings, vital signs, patient charts, and biometric data via the telemedicine interface, allowing them to help evaluate and manage the initial patient care. If needed, the emergency physician, located in Atlanta, can access the vast network of specialty health services at Emory, such as obstetrics/gynecology, pediatrics, cardiology, or neurology.

EMS personnel can focus their attention on patient care while the Emory emergency provider coordinates with the receiving hospital about the incoming patient's arrival and any treatment plans that have been initiated, potentially saving vital time.

Consider a stroke patient. "If a provider gets to the patient within four hours of the stroke, they can give clot busting medication," says Carr. "Outside of that four hours, you can't give that because it can increase bleeding. Up to 24 hours after the stroke, we can do a thrombectomy—we pull a clot out with a wire in an interventional cardiology suite. We've had several cases where the patient was outside the four-hour window but within the 24-hour window, and we were able to direct the crew to bypass the closest stroke center because it didn't have the capability of doing the thrombectomy and direct it to a center that could. We called that hospital and directed them to be ready to do a CAT scan as soon as the patient arrived, sent all the



PHOTO JACK KEARSE

Emory physicians and nurses monitor ICU patients in hospitals in Bainbridge and Douglas from the Emory eICU center in Atlanta.

patient's information so they were registered before they arrived, and notified the on-call neurologist. Those micro-steps ultimately reduce the time to intervention for that patient, which can make a big difference in the outcome."

ER-TEMS was created in 2020 and initially worked with 18 partner hospitals and 30 ambulances in rural areas. Today, the program has expanded to include 35 partner hospitals and 45 ambulances. "The ultimate goals of ER-TEMS are to address disparities in medical care, support rural EMS personnel, and enhance access to high quality health care for rural patients," says Carr. "We would like to create a model that is easy to replicate throughout the country."

## Monitoring rural ICU patients

Critical care patients at Memorial Hospital and Manor in Bainbridge, Georgia, and Coffee Regional Medical Center in Douglas, Georgia, are receiving access to additional care and remote monitoring through Emory Healthcare's eICU (electronic Intensive Care Unit) services, based in Atlanta.

From the Emory eICU Center, located at Emory Saint Joseph's Hospital campus, Emory eICU physicians and nurses monitor ICU patients at Memorial Hospital and Manor and Coffee Regional Medical Center remotely,

while providing consultation and expertise. The services are a form of telemedicine, using state-of-the-art technology to provide an additional layer of critical care for ICU patients. The continuous, 24/7 monitoring and access to intensivist or critical care physicians and other support staff, particularly on night and weekend shifts, are crucial to smaller regional and community hospitals.

"During night and weekend shifts at smaller outlying hospitals, intensivists may not always be present to assist onsite physicians and providers, so additional resources are often needed to care for some of the sickest patients in a hospital," says Cheryl Hiddleston, Emory Healthcare director of eICU operations. "Our services provide consult via a video and audio platform to onsite physicians, staff, and patients, where we can see and communicate bi-directionally between the regional or community hospital and the Emory eICU Center in Atlanta."

Dean Burke, former Georgia State Senator from District 11 and former chief medical officer at Memorial Hospital and Manor states, "This collaboration between Emory and rural hospitals is critical to providing needed intensive care services in these rural communities. The recent pandemic showed policymakers the importance of high-level critical care services being provided locally when regional systems

were filled beyond capacity. This eICU grant program will support the rural hospital while providing needed high-level critical care access close to home.”

Emory eICU Center also provides remote critical care monitoring services to Washington County Regional Medical Center in Sandersville, Georgia.

### Taking care to where it's needed

For many people, access to health care is minimal or nonexistent. Emory In MOTION aims to change that by bringing health services to medically underserved communities in south Georgia as well as in metro Atlanta. The mobile health units are equipped to provide nurse-led health care in partnership with community agencies.

Funded by one of the largest Health Resources and Services Administration grants in the history of the School of Nursing (SON), Emory in MOTION is a mobile health training program that funds 10 mobile health student scholars annually as well as a new van used through the

Georgia Ellenton Farmworker Health Clinic. (See “Caring for Migrant Farmworkers” on page 4.)

In Atlanta, two teams of mobile health student scholars led by nurse practitioners work with several local organizations to bring care to their constituents. Working with the Georgia Harm Reduction Coalition, the Emory in MOTION team staffs the organization’s van, going to public parks, store parking lots, and other locations to provide needle exchanges, Narcan, fentanyl test kits, health education, and HIV and hepatitis C testing. The SON team also provides health screenings, health care, wound care, and telehealth services, all with the goal of reducing the impact of substance use, HIV/AIDS, and other conditions.

Emory in MOTION works with Boat People SOS, a nonprofit that provides education and direct assistance to immigrant and low-income families. On a weekly basis, students run a free community clinic established by Quyen Phan, SON assistant clinical professor, providing health screenings, primary care, and vaccinations. “The students

work with community partners to provide breast cancer screenings and education, they host vaccination clinics and health fairs, and they man pop-up clinics,” says Phan.

The team works with several other community organizations, all with the same goal. “Often, when people are disenfranchised, they don’t get the care they deserve,” says Phan “As nurses, we need to be better prepared to close that gap.”

### Catching early dementia diagnosis

In a state where many counties lack a single neurologist and have few family doctors, early dementia diagnosis and care can be next to impossible. Indeed, of the 385,000 Georgians reporting some form of cognitive impairment, 80 percent have never received an evaluation or diagnosis. The result is an average six-year delay in getting a diagnosis for memory loss in the state.

**“Often when people are disenfranchised, they don’t get the care they deserve. As nurses, we need to be better prepared to close that gap.”**

QUYEN PHAN, SCHOOL OF NURSING  
ASSISTANT CLINICAL PROFESSOR

Georgia Memory Net seeks to change that. Funded by the Georgia legislature in 2018, Georgia Memory Net is a clinical and collaborative nonprofit program comprised of providers from Emory, the Morehouse School of Medicine, Augusta University, and the Mercer College of Medicine. It is sponsored by the Georgia Department of Human Services and managed by the Cognitive Neurology program at Emory. Emory

serves as the central coordinating and training center for the entire network across the state.

Here’s how it works. Primary care providers refer patients to one of the Georgia Memory Net Memory Assessment Clinics located throughout the state. At these clinics, patients are able to receive an assessment comparable to what they would get if they drove all the way to Atlanta. “We provide extra training by reviewing

the diagnostic studies and case presentations with providers at those sites,” says Chad Hales, an Emory neurologist and assistant director of Georgia Memory Net. “I meet with team members on a weekly basis to make sure their diagnostic skills are where they need to be and to make sure the quality of evaluations being done throughout the state is on par with those done at the Emory Goizueta Alzheimer’s Disease Research Memory Clinic.”

Patients also meet with a care coordinator who evaluates and addresses any challenges they may be dealing with regarding behaviors and activities of daily living. The coordinator recommends any needed lifestyle modifications, makes sure the patient has appropriate legal documents in place, such as power of attorney, and addresses caregiver burden. The coordinator also makes referrals to community partners, such as the Area Agencies on Aging and the Alzheimer’s Association, for resources and services available in the community. The clinician and the care coordinator develop a patient care plan, which they send to the patient and the patient’s primary care physician.

Diagnosing Alzheimer’s and other related dementias early is more and more critical as new treatments emerge. Two drugs have recently been approved by the FDA that have been shown to slow the cognitive decline associated with Alzheimer’s in patients early in the disease process. Other promising treatments are on the horizon.

“Most of the medications coming to market target patients with very mild symptoms,” says Hales. “If the patient has progressed beyond that point, they likely have missed the opportunity to benefit. And in the coming years, the needle may even shift to being preventative—identifying people at risk for developing dementia and prescribing treatments to prevent its onset. But to do that, you first have to identify those people.”

Georgia Memory Net currently has seven sites throughout the state, as well as nine telehealth sites that function within established county Department of Public Health sites. “As of November 2023, Georgia Memory Net has seen more than 3,000 patients,” says Hales. “Our network continues to grow, getting us closer to our goal of bringing the highest quality dementia diagnosis to every corner of the state.”



PHOTO BRANDON CLIFTON

# Investing in life-changing discovery

Emory University secured more than \$1 billion in research funding in FY23, placing us among a select group of elite universities. The Woodruff Health Sciences Center (WHSC) accounted for 94 percent of that total, which supports research in Emory's schools of medicine, public health, and nursing, as well as Winship Cancer Institute and Emory National Primate Research Center. Our research creates new ways to diagnose, prevent, treat, and cure diseases and injuries. Consider drug development. Emory ranks number three worldwide in terms of discovery and development of FDA-approved drugs and vaccines.

As critical as research grants are to patients and to society at large, they are not without cost. Conducting research involves substantial investment from institutions like Emory to provide building space, heating and air-conditioning, lights, custodial services, administrative management, and more. Each year, Emory covers a large portion of the infrastructure costs for research conducted here. Last year, for example, WHSC invested \$44.2 million in such support for costs unrecovered from research sponsors.

Here's a look at just some of the groundbreaking research into which WHSC has invested its talent, time, and resources:



## Fueling the cancer moonshot

In August, a new federal agency within the US Department of Health and Human Services selected Emory as the inaugural recipient of funding to support transformative breakthroughs in health research as part of President Biden's Cancer Moonshot. Specifically, the funding supports the work of Philip Santangelo, a professor in the Wallace H. Coulter Department of Biomedical Engineering at Emory and Georgia Institute of Technology, and a researcher at Winship Cancer Institute. Santangelo's lab is working to develop new mRNA-based drugs to "turn on" or "turn off" genes in individual immune cells as a way to treat, prevent, and cure cancers and other diseases.

"Over the past few years, COVID-19 vaccines developed using mRNA technology have saved millions of lives around the world," President Biden said when he made the award announcement. "Now, a skilled team at Emory University in Atlanta will work to adapt these technologies to turn more cancers into curable diseases. This is a bold endeavor that has the potential to transform the fight against cancer and other difficult diagnoses."

With many chronic infections and diseases, including various forms of cancer, the immune system is suppressed or dysregulated—allowing cancer cells to multiply unchecked, for example, or in the case of organ transplantation, attacking healthy cells that the body

needs. Santiago's team is working to develop a molecular "toolbox" that could be used to manipulate how a patient's immune system functions, prompting it to target and attack tumor cells, or to tolerate transplanted organs—without the severe side effects that are common with more traditional treatments like chemotherapy.

First lady Jill Biden toured Santangelo's lab in September to learn about the groundbreaking research. "As a mom who watched my son die of cancer, the one thing I never gave up on was hope. As a mother, you can't," she said after the tour. "This work gives families the power to hold on to that hope just a little bit longer. Because this work could change lives."



## Confronting the maternal health crisis

If maternal mortality is an indicator of a nation's health, then the United States is in bad shape. Of the wealthiest countries in the world, the nation has the highest maternal mortality rate—and it keeps getting worse. In 2021, maternal mortality rose by 40 percent in the US, with Black women dying at more than twice the rate of white women, according to the Centers for Disease Control and Prevention.

Georgia isn't immune to the crisis. In fact, Georgia's maternal mortality rate is among the worst in the country with 33.9 deaths per 100,000 live births. Again, the numbers are the worst for Black women.

In an effort to turn the tide, Emory's Rollins School of Public Health and School of Medicine have teamed up with Morehouse School of Medicine (MSM) to create a Maternal Health Research Center of Excellence. One of ten such centers established by the National Institutes of Health, the center will develop innovative approaches to reduce pregnancy-related complications and deaths, while also promoting maternal health equity.

MSM and Emory researchers will collaborate with a network of community partners to launch the Center to Advance Reproductive Justice and Behavioral Health among Black Pregnant/Postpartum Women and Birthing People (CORAL). CORAL's mission will be to help Black women survive and thrive while pregnant and postpartum by translating maternal behavioral health research and interventions into action.

Emory also partnered with MSM as well as Mercer University School of Medicine and ResearchAmerica! to host the inaugural Symposium to Address the Maternal Health Crisis in Georgia. The event brought together stakeholders from across health care, state and federal governments, community partners, and advocacy groups to collaboratively identify opportunities to improve maternal and newborn health in Georgia.

## Harnessing AI to improve health equity

Emory is embarking on a new initiative that will unite the power of machine learning and big data to transform the ways in which health care systems prevent, diagnose, treat



and cure diseases on a global scale. The Emory Empathetic AI for Health Institute will utilize artificial intelligence (AI) and computing power to discern patterns in vast amounts of data and make predictions that improve patient health outcomes in diseases such as lung, prostate and breast cancer, heart disease, diabetes, and more. While AI is already being deployed to improve diagnoses and treatment for numerous health conditions, the resounding impact AI can have on health care is just beginning.

As Georgia's first institute of its kind, Emory AI.Health will foster the development of accessible, cost-effective and equitable AI tools by developing an ecosystem of multidisciplinary experts from Emory, the Atlanta VA

**“There is a critical need to develop dedicated AI-based risk-prediction models for minority patients.”**

ANANT MADABHUSHI, PROFESSOR  
IN THE WALLACE H. COULTER  
DEPARTMENT OF BIOMEDICAL  
ENGINEERING AT EMORY AND  
GEORGIA TECH

Medical Center, the Georgia Institute of Technology, and others, and seeking public-private partnerships to propel new research forward. It will then serve as an engine to deploy those tools to the patient's bedside, initially within Emory Healthcare and ultimately across the globe.

Emory AI.Health's mission is to innovate, deploy, and scale AI technologies for impacting patient health and wellness. A core pillar of the institute is promoting health equity by reducing the cost of care and increasing both the quality of and access to care for all populations, with an initial focus on the Atlanta region's underserved population. Recent studies show that personalized, precision medicine is superior to the conventional one-size-fits-all approach to health care. Given precision medicine's ability to personally tailor diagnoses and treatments, it would seem that the discipline would inherently promote health equity; but a lack of diversity in clinical trials can exacerbate existing health disparities by creating an algorithmic bias toward majority populations. Thus, improving health

equity will be at the forefront of Emory AI.Health.

“There is a critical need to develop dedicated AI-based risk-prediction models for minority patients,” says Anant Madabhushi, a professor in the Wallace H. Coulter Department of Biomedical Engineering at Emory and Georgia Tech, who leads Emory AI.Health. “The reduction in cost resulting from AI-informed precision medicine, as well as the elimination of the need for invasive biopsies, are even greater boons to underserved and under-resourced populations locally in Atlanta, nationally, and globally.”

#### **At the forefront of climate change research**

The newly established Emory Climate Research Initiative draws together faculty with diverse expertise to advance climate-related research and curricula across the institution, focusing on areas where Emory can make unique contributions to humanity's efforts to understand and mitigate the impacts of climate change. “The aim of the new initiative is to help Emory as an academic community rise to the opportunity and confront the challenges of our current moment—to lead in climate change research and teaching nationally as well as serving as a regional anchor institution for our shared response to climate change,” says Provost Ravi Bellamkonda, who established the initiative.

“Emory has immense potential as a research leader and a living laboratory for climate solutions that integrate scholarly excellence and innovation,” he explains. “Our community has already made substantial contributions in this field, particularly in understanding human health impacts and environmental justice issues, and I believe we are well-positioned to accelerate our progress going forward.”

The initiative will build on Emory's robust history of student, faculty, and staff engagement in sustainability and environmental advocacy, as well as from recent carbon-reduction commitments made at the executive level.

As early as 2004, Emory leaders adopted sustainability as a guiding principle for the university, and since that time it has become nationally known for innovations in green building, curriculum development, sustainable food procurement, and energy and water conservation, among other campus measures.



#### **Promoting cancer health equity research**

Winship Cancer Institute and other leading scientific institutions are making major advances in understanding cancers, but research findings do not benefit everyone equally. While differences in access to care are known to contribute to cancer disparities, targeted research is needed to define other factors that drive inferior outcomes for certain groups of patients.

A new center at Winship—the Winship Center for Cancer Health Equity Research—will focus research efforts on eliminating cancer disparities in Georgia and nationwide. Toward this goal, the center will examine biological, behavioral, and social factors affecting cancer development, risk, and response to therapy; fund new studies; strengthen collaborations; and improve representation in clinical trial participation.

The Winship Center for Cancer Health Equity Research will initially prioritize the six cancers that represent the greatest cancer burden and contribute to significant disparities in Georgia: multiple myeloma and lung, breast, prostate, colorectal, and pancreatic cancers.

The center's research will target vulnerable populations in Georgia with the most serious cancer disparities: Black patients, Hispanic patients, women, rural residents, and Georgians living with HIV. Later, the center will add more areas of focus, including Asian Americans, LGBTQ+ people, and other vulnerable groups and expand beyond the state to facilitate national impact.

“Winship has a long history of working toward more equitable cancer health outcomes, and this strategic focus will accelerate our efforts in significant ways,” says Winship Executive Director Suresh Ramalingam. “As the centerpiece, the Winship Center for Cancer Health Equity Research will work to identify and develop strategies to overcome disparities in cancer prevention, detection, treatment, and survivorship so all Georgians have an equal opportunity to lead healthy lives.”



PHOTO JACK KEARSE

## Bolstering the state's health care workforce

In Georgia, the health care workforce shortage has reached critical levels, exacerbating challenges in delivering quality care. The Woodruff Health Sciences Center's (WHSC) comprehensive training programs and workforce development initiatives play a crucial role in addressing that shortage.

WHSC invests \$38 million in training the next generation of physicians, nurses, nurse practitioners, physician assistants, physical therapists, and public health practitioners. Many of these professionals remain in the state after graduation, giving Georgia a solid foundation of providers. For example, 927 of the physicians at Grady Memorial Hospital are Emory School of Medicine (SOM) faculty. Children's Healthcare of Atlanta has 465 Emory physicians, and the VA Atlanta Healthcare has 304.

Beyond educating tomorrow's providers, WHSC offers various initiatives aimed directly at confronting the health care workforce shortage.

Here are a few:

### Pumping up primary care

One out of three Georgians—more than 3.3 million people—live in areas without a primary care physician. Rural counties with a lack of health resources are seeing the most need. To address this critical shortage, the SOM offers the Kathelen and Dan Amos Medical Student Loan Forgiveness program. Current SOM students, recent graduates, and doctors completing their residencies at Emory who will or do practice in an area of primary care—family medicine, internal medicine, pediatrics, and geriatrics—can apply. Recipients of an award can apply the following year for an additional award, with a maximum of four awards totaling \$160,000. The first award obligates

the recipient to practice in primary care for two years in Georgia. Each additional award obligates an additional year of practice. Recipients who practice in rural areas are eligible for extra money.

The program currently has 20 scholars who have committed to two years, 11 scholars to three years, and four scholars to four years. Cumulatively, this translates to 89 years of pledged practice in Georgia from 35 Amos Scholars.

Average medical school debt is more than \$200,000, and that doesn't include undergraduate or other educational debt. So for medical students, that money can mean the freedom to follow the path of their hearts rather than chase more lucrative specialties to service their loans. For those in their residency, the program offers the opportunity to branch out beyond the metro area.

**“Loan forgiveness has certainly afforded me the option to look for work in more rural areas of the state that do not have as robust loan forgiveness programs.”**

RUSSELL KING,  
INTERNAL MEDICINE RESIDENT

my interests such as combined outpatient and inpatient models, which are becoming more rare, however still exist in rural areas.”

### Training community health workers

Community health workers often have different job titles: community health advisor, outreach worker, patient navigator, peer counselor, and promotore de salud. Whatever

they are called, these workers provide a vital service. As trusted voices in their often-underserved communities, they help their vulnerable neighbors stay healthy by connecting them to well-child care, chronic disease care, mental health and substance use prevention and treatment, and other vital services.

“Community health workers were often invisible before the pandemic, but during COVID-19, they played a vital role in vaccine outreach and building vaccine confidence,” says Beth Ann Swan, interim associate dean for education at the Nell Hodgson Woodruff School of Nursing (SON). “Now they are being recognized as a critical part of the public health workforce.”

The SON is working to expand this critical workforce through a new training program, the Atlanta Region Community Health Workforce Advancement (ARCHWAY) program. The school provides 12 weeks of training for new and existing community health workers serving vulnerable populations in Clayton, Coweta, DeKalb, Fulton, and Gwinnett counties. This training is coupled with recruitment and retention initiatives such as field placements, tuition support/stipends, job placement, and wrap-around services including early care and education, financial literacy support, and mentoring. The training features simulated experiences and hands-on learning involving topics such as patient advocacy, community outreach, service coordination, health promotion, emergency response, heart disease, stroke, and HIV prevention and treatment. Participants complete 80 hours of field placement with partners such as AID Atlanta, Boat People SOS, Latina Community Fund, and Emory Hillandale Hospital.

### Boosting Georgia's epidemiology capacity

When Kathleen Toomey looks out over the state's epidemiology workforce, she's encouraged by what she sees. The situation, however, was quite different when the commissioner of the Georgia Department of Public Health (GDPH) joined the office in 2019.

“When I came, the epi staff in the state office was in fair shape, I'd say, but we had very little epi capacity within the districts,” says Toomey. “I'd describe it as spotty and variable, and that was before the pandemic.”



PHOTO JOHN ZILLIOUX

Nursing students are trained in a state-of-the-art simulation lab in the Emory Nursing Learning Center. The lab provides experiential and immersive learning opportunities.

Today, epidemiologic capacity across the state is approaching robust levels thanks to the Rollins Epidemiology Fellowship. Now in its fourth cohort, the program was launched in the early days of the pandemic as a cornerstone of the Emory COVID-19 Response Collaborative, a partnership between the Rollins School of Public Health (RSPH) and the GDPH. The intent was to bolster a meager epidemiology workforce in the 18 health districts across the state during a critical time.

The result, by any measure, has been a resounding success. Not only have the fellows provided invaluable manpower and expertise in helping local districts navigate the crisis, but they also continue to contribute as the pandemic wanes, allowing the districts to tackle local needs

long relegated to the back burner. Perhaps most importantly, more than half of the fellows to date have accepted post-fellowship jobs in state and local public health, the majority of them in Georgia.

“The fellowship has been successful beyond my wildest dreams,” says Toomey. “It certainly enabled us to respond much more effectively during the pandemic, but it did so much more. It allowed us to build a larger, more capable staff since many of the fellows have stayed on. It enabled us to engage faculty and focus meaningful research of value on public health practice. And it has raised the interest and enthusiasm of young, bright, future public health leaders. The Rollins Epidemiology Fellowship has been a true game changer for us.”

## Fueling the economy

The Woodruff Health Sciences Center (WHSC) has an annual \$14.8 billion economic impact on the local economy, stemming from employment, construction, innovation, and more. With 34,710 employees, WHSC helps make Emory one of the the largest employers in metro Atlanta.

One of the biggest construction projects ever for the Emory campus, the 350,000-square-foot Health Sciences Research Building (HSRB)-II opened in 2023. The state-of-the-art research facility features “lab neighborhoods,” digital experiential platforms, and an innovation zone for start-ups. Also

opening in 2023 was the 17-story, 450,000-square-foot tower housing Winship at Emory Midtown. The facility was designed to bring outpatient and inpatient cancer care together in five “care communities” organized by type of cancer, with adjoining floors, shared living rooms, and shared care teams of experts from multiple disciplines. Nearly all the services the

patients need—from diagnostics and doctors’ appointments, to infusions and support services—will be brought directly to them in the care community by multidisciplinary care teams specialized in their cancer type.

WHSC brings in 94 percent of all the research funding of Emory University, or a total of \$1 billion. Key health sciences research centers funded by the National Institutes

of Health include the Emory Winship Cancer Institute, a National Cancer Institute–designated center; the Emory Vaccine Center, one of the world’s largest vaccine research centers; the Emory Center for AIDS Research; the Georgia Clinical & Translational Science Alliance; the Influenza

Pathogenesis & Immunology Research Center; the Alzheimer’s Disease Research Center; and the Chemical and Biology Discovery Center.

Emory currently manages more than 1,800 technologies, which has led to the formation of 138 companies and more than 65 new products in the marketplace, some of which—like the discovery of several HIV drugs—have

offered major health and societal benefit. Since FY 2000, the university has filed more than 3,400 US patent applications and been issued more than 800 US patents. In that time, Emory has executed more than 850 license agreements, resulting in more than \$1.3 billion in licensing revenue, thereby creating additional funding for new and ongoing research.



The WHSC is a major contributor to the Atlanta economy.

# VALUE TO THE COMMUNITY

Emory's Woodruff Health Sciences Center (WHSC) consistently works toward building a healthier world through research, education, and patient care. These figures illustrate the variety of ways in which WHSC benefited the community in fiscal year 2023.

## Emory University WHSC Community Benefits

Emory University — total benefits to the community*	\$728,100,000
Additional WHSC investment in research	\$44,200,000
Unreimbursed patient care provided by Emory Medical Care Foundation at Grady Hospital	\$21,800,000
Investment of Emory Medical Care Foundation services at Grady Hospital	\$75,800,000

## Emory Healthcare Community Benefits

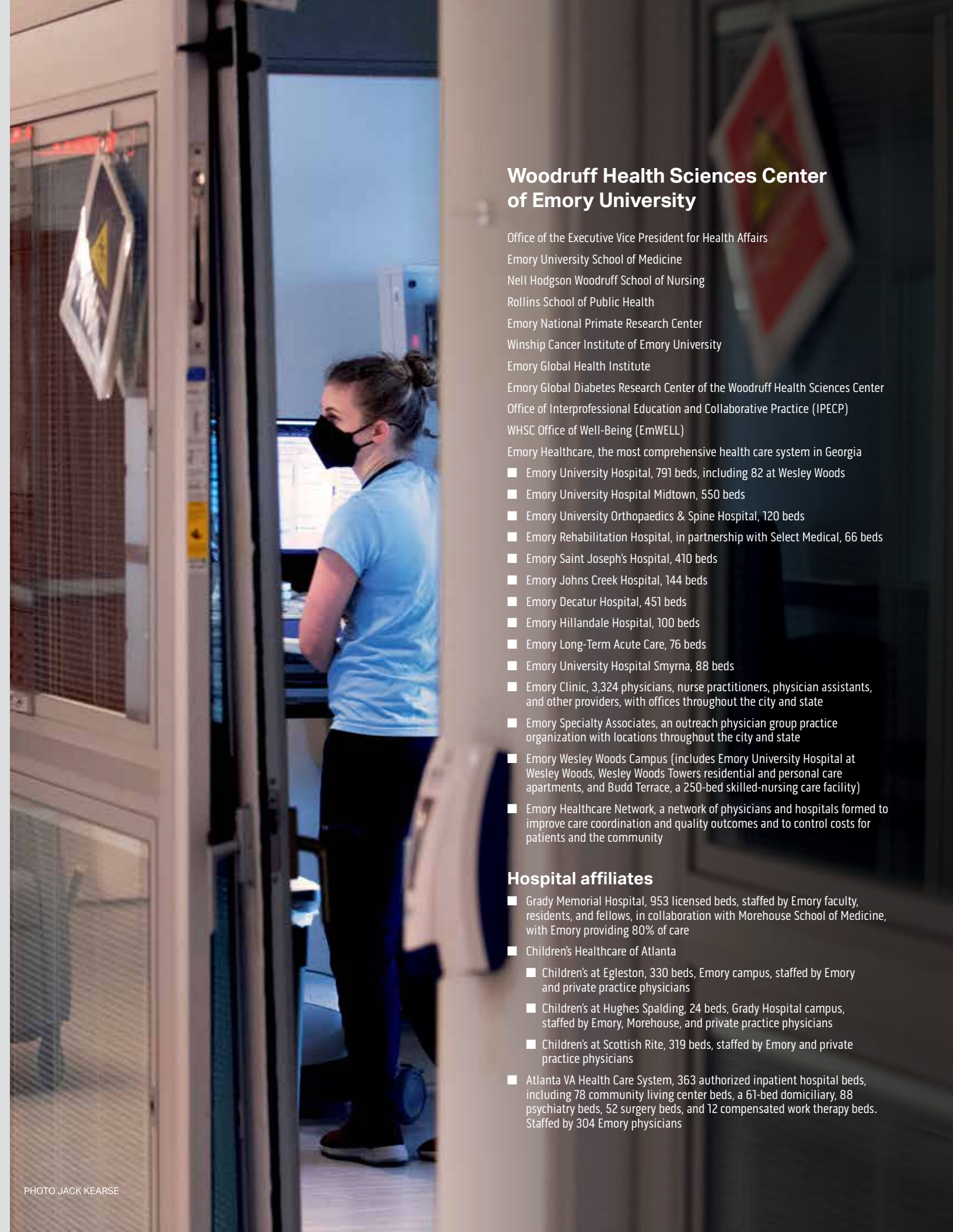
Hospitals — total benefits to the community*	\$527,900,000
Non-hospitals — total benefits to the community**	\$51,500,000

**TOTAL COMMUNITY BENEFITS** **\$1,449,300,000**

\* As defined by the American Hospital Association (contribution categories on IRS Form 990 Schedule H) and includes: financial assistance and certain other community benefits at cost, community building activities, Medicare shortfall and bad debt expense attributable to financial assistance. Emory University \$728.1 million consists only of health profession education and research, which is included in the AHA definition of financial assistance.

\*\* Includes financial assistance, community health improvement services and community benefit operations, health professions education, and case and in-kind contributions for community benefits.

Based on expenditures of \$7.6 billion in FY 2023, WHSC has had an estimated economic impact on the metro area of \$14.8 billion.



## Woodruff Health Sciences Center of Emory University

- Office of the Executive Vice President for Health Affairs
- Emory University School of Medicine
- Nell Hodgson Woodruff School of Nursing
- Rollins School of Public Health
- Emory National Primate Research Center
- Winship Cancer Institute of Emory University
- Emory Global Health Institute
- Emory Global Diabetes Research Center of the Woodruff Health Sciences Center
- Office of Interprofessional Education and Collaborative Practice (IPECP)
- WHSC Office of Well-Being (EmWELL)
- Emory Healthcare, the most comprehensive health care system in Georgia
  - Emory University Hospital, 791 beds, including 82 at Wesley Woods
  - Emory University Hospital Midtown, 550 beds
  - Emory University Orthopaedics & Spine Hospital, 120 beds
  - Emory Rehabilitation Hospital, in partnership with Select Medical, 66 beds
  - Emory Saint Joseph's Hospital, 410 beds
  - Emory Johns Creek Hospital, 144 beds
  - Emory Decatur Hospital, 451 beds
  - Emory Hillandale Hospital, 100 beds
  - Emory Long-Term Acute Care, 76 beds
  - Emory University Hospital Smyrna, 88 beds
  - Emory Clinic, 3,324 physicians, nurse practitioners, physician assistants, and other providers, with offices throughout the city and state
  - Emory Specialty Associates, an outreach physician group practice organization with locations throughout the city and state
  - Emory Wesley Woods Campus (includes Emory University Hospital at Wesley Woods, Wesley Woods Towers residential and personal care apartments, and Budd Terrace, a 250-bed skilled-nursing care facility)
  - Emory Healthcare Network, a network of physicians and hospitals formed to improve care coordination and quality outcomes and to control costs for patients and the community

## Hospital affiliates

- Grady Memorial Hospital, 953 licensed beds, staffed by Emory faculty, residents, and fellows, in collaboration with Morehouse School of Medicine, with Emory providing 80% of care
- Children's Healthcare of Atlanta
  - Children's at Egleston, 330 beds, Emory campus, staffed by Emory and private practice physicians
  - Children's at Hughes Spalding, 24 beds, Grady Hospital campus, staffed by Emory, Morehouse, and private practice physicians
  - Children's at Scottish Rite, 319 beds, staffed by Emory and private practice physicians
- Atlanta VA Health Care System, 363 authorized inpatient hospital beds, including 78 community living center beds, a 61-bed domiciliary, 88 psychiatry beds, 52 surgery beds, and 12 compensated work therapy beds. Staffed by 304 Emory physicians



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