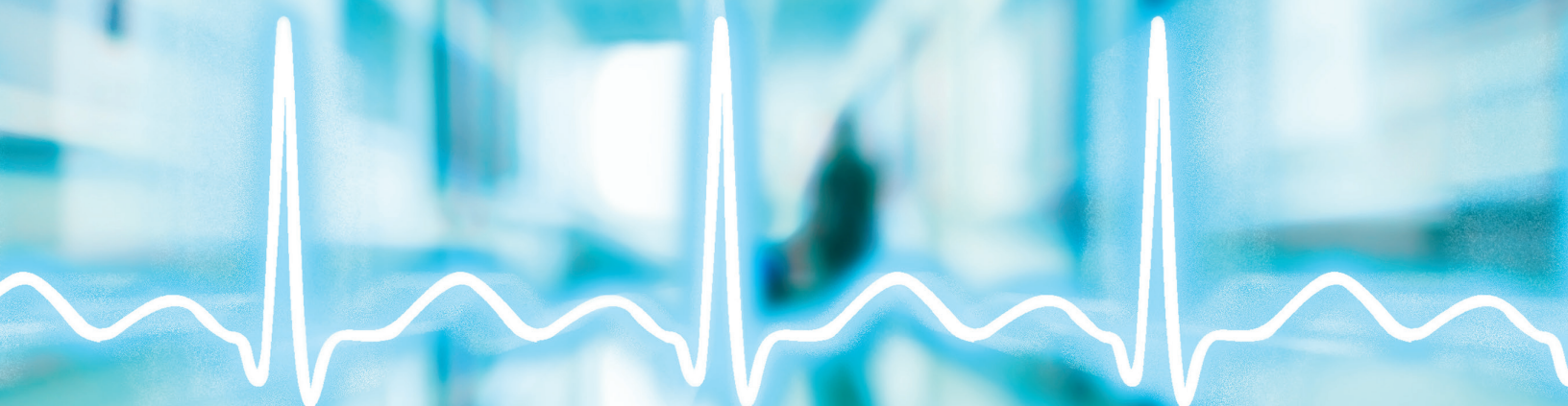


HEALTHCARE INDUSTRY

GEORGIA: CENTER OF THE SOUTHEASTERN HEALTHCARE ECOSYSTEM



COMMUNITY AND ECONOMIC DEVELOPMENT



GEORGIA: CENTER OF GLOBAL HEALTH

Georgia is known as the public health capital of the world. Georgia's global health giants such as the Centers for Disease Control and Prevention, the Carter Center, CARE, and Emory's Global Health Institute, provide critical research and promote global health and well being. But Georgia's healthcare ecosystem is multifaceted. The state's reputation as a center for healthcare excellence is also based on its world-class hospitals, numerous research universities and a leading-edge healthcare and technology infrastructure. This ecosystem, when coupled with robust economic growth and an increasingly diverse population base, positions Georgia to meet the challenges of an ever-evolving healthcare climate.



STRENGTHS OF GEORGIA'S HEALTHCARE ECOSYSTEM:

- Population growth and diversity
- A thriving community of healthcare professionals
- Internationally-recognized hospitals, including major teaching hospitals
- Well-developed network of physicians and practitioners
- Internationally-recognized research organizations including world-class medical schools, colleges and universities
- Highly-respected global public health organizations
- Engaged and innovative industry leaders in biopharma, healthcare information technology, medical devices and research
- A quality of life that attracts a highly-educated, technology-savvy workforce
- Unsurpassed access to the world through Hartsfield-Jackson Atlanta International Airport

GEORGIA'S HEALTHCARE ECOSYSTEM

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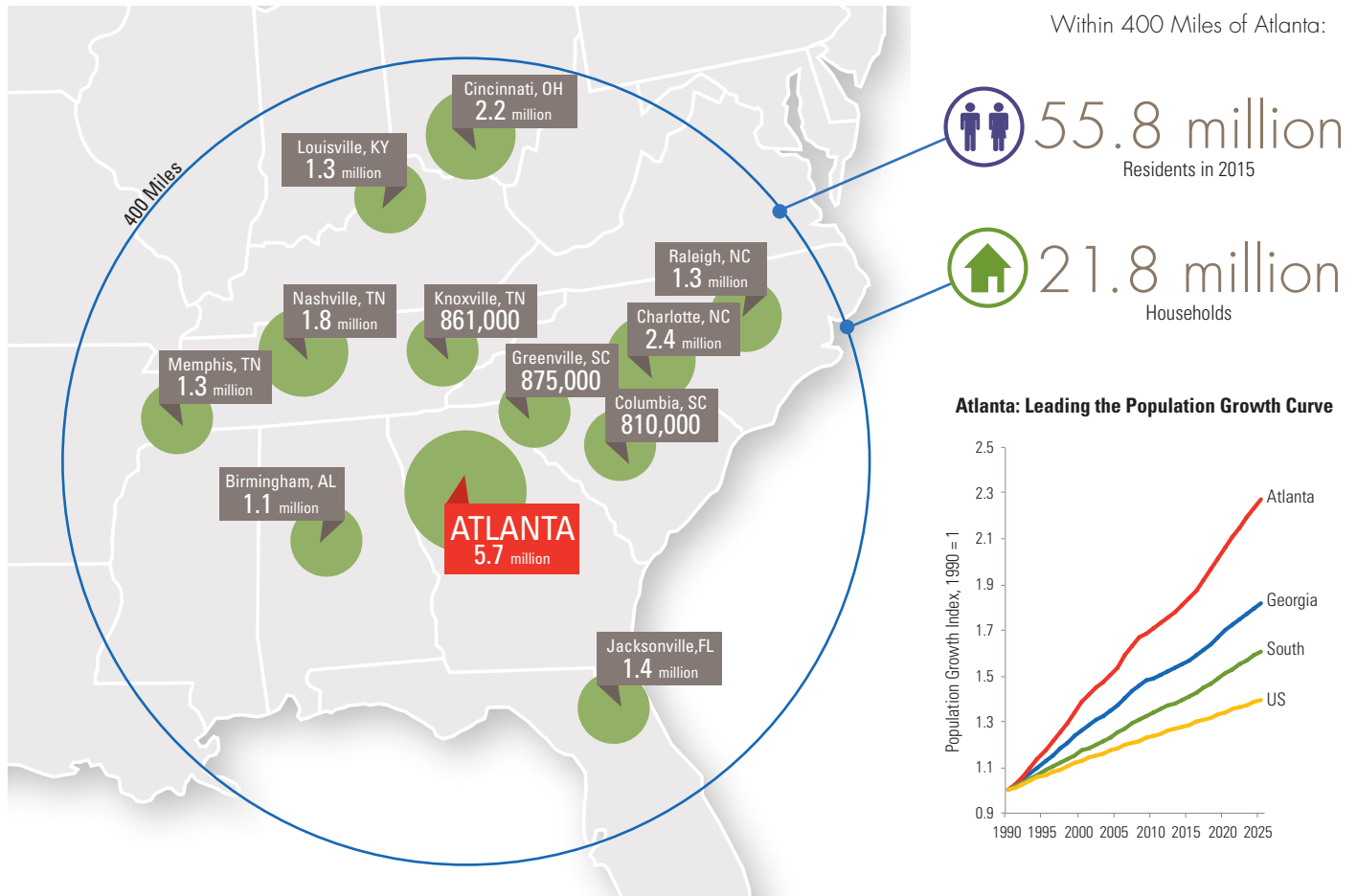
TRANSPORTATION



GROWING AND DIVERSE POPULATION DRIVES HEALTHCARE ECOSYSTEM

Georgia is home to more than 10 million residents, making it the 8th most populous state in the U.S. Between 2014 and 2015, Georgia added 118,000 new residents and was the 4th fastest growing state in the country. Population growth in the southeastern U.S. overall makes the region attractive to all types of businesses and industries, but especially the healthcare industry. This concentrated demographic and economic vitality provides the perfect environment for healthcare industry growth. Prime consumers of healthcare services, the young and the old, are integral parts of region's success. The geography within a 400-mile radius of Atlanta is home to 12.5 million children under the age of 18 and 8.5 million residents 65 years of age or older. Atlanta is the largest healthcare hub in the Southeast with 156 hospitals and 122,000 healthcare practitioners, more than any other metro area within 400 miles.

GROWING POPULATION AND CENTRAL LOCATION FOR THE REGION



DIVERSE POPULATION IMPORTANT FOR HEALTHCARE INDUSTRY

Clinical researchers and pharmaceutical developers need access to a racially and ethnically diverse population as they develop treatments for various diseases and conditions. A major challenge for companies conducting clinical trials is inability to enroll diverse subjects. Georgia and Atlanta offer diversity that is critical to researchers.

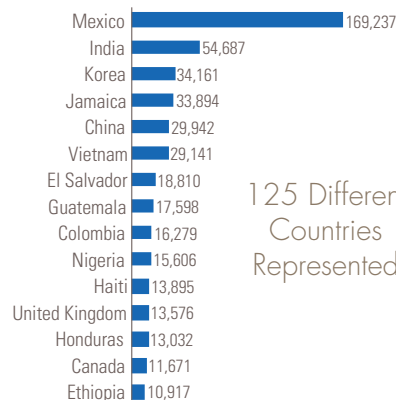
Atlanta's Diversity Index*

68.1

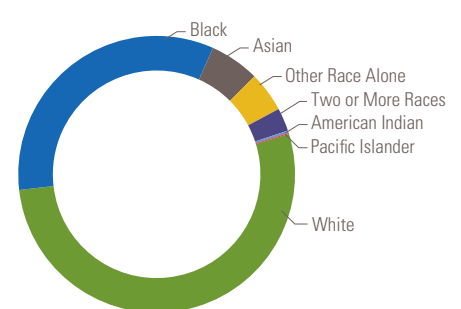
*68% chance that when you meet someone on the street, they'll be a different race or ethnicity than you.

Foreign Born by Place of Birth

Atlanta MSA (Countries Contributing 10,000 or More)



Atlanta's Racial Diversity





GEORGIA: 238,000 HEALTHCARE PROFESSIONALS IN DIVERSE FIELDS

Georgia is home to more than 238,000 healthcare practitioners and workers in technical healthcare fields. The 61 occupations that comprise the industry include registered nurses, practical nurses, physicians and surgeons, pharmacy technicians, emergency medical technicians and paramedics, pharmacists, dental hygienists, medical and clinical laboratory technicians, radiologic technologists, physical therapists, dentists and a host of other related job categories.

Universities across the Southeast educate students for careers in healthcare. Many of the graduates come to Georgia to work in hospitals, medical practices, research organizations, or the bioscience industry.

Georgia's medical school graduates often stay in the state. The abundance of top-notch hospitals, medical practices and research organizations provide the ultimate environment for doctors as they strive to stay on the leading edge of medical technology.

Source: State Physician Workforce Data Book, 2014



Atlanta: Most Students in Healthcare Fields in the Southeast

Area of Study	Ranking	Enrollment
Biosciences Enrollment	1st	11,422
Biosciences Degrees	1st	1,927
Medical Enrollment	2nd	1,191
Medical Degrees	5th*	170

*Augusta ranked third with 205 degrees
Source: IPEDS, 2014 Data

Georgia: Top Physician Retention Rates

45.7%

Physicians retained in state from undergraduate medical education (13th best in the U.S.)

48.4%

Physicians retained in state from graduate medical education (16th best in the U.S.)

72.2%

Physicians retained in state from both graduate and undergraduate combined (17th best in the U.S.)

Source: State Physician Workforce Data Book, 2014

Top Georgia Schools Graduating Bioscience, Medical and Healthcare Professionals:

Emory University	1,504	Kennesaw State University	309
University of Georgia	1,366	Georgia College and State University	258
Augusta University	965	South Georgia State College	250
Mercer University	883	Brenau University	246
Armstrong State University	683	Piedmont College	236
Georgia State University	546	Georgia Institute of Technology	206
University of West Georgia	446	Gordon State College	174
Georgia Southern University	437	Columbus State University	162
Life University	435	Dalton State College	138
Middle Georgia State College	413	Point University	111
Clayton State University	406	Abraham Baldwin Agricultural College	103
Valdosta State University	372		

Source: IPEDS, 2014 metro Atlanta area

Wallace H. Coulter Department of Biomedical Engineering

Atlanta's two *U.S. News and World Report* Global 100 universities, Georgia Tech and Emory University, partner to provide a unique graduate level program in bioengineering. Students participating in the program benefit from the world-class engineering resources at Georgia Tech, while gaining exposure to Emory's internationally-recognized medical research programs. "The

Wallace H. Coulter Department of Biomedical Engineering at Georgia Tech and Emory is a true success story in risk-taking and innovation - a visionary partnership between a leading public engineering school and a highly respected private medical school." Technical areas of focus include:

- Biomechanics and Mechanobiology
- Biomedical Imaging and Optics

- Cellular, Molecular and Biomaterials Engineering
- Computational Biomedical Systems Analysis
- Healthcare Informatics and Technology

Source: Wallace H. Coulter Department of Biomedical Engineering website



Photo: Jack Kears, Emory University

STATE-OF-THE-ART HOSPITALS, TREATMENT FACILITIES AND REHABILITATION CENTERS

47,000+

Registered nurses working in hospitals and rehabilitation centers

10,000

Doctors and therapists working in hospitals and rehabilitation centers

EMSI 1st Q 2016

Georgia is home to more than 400 hospitals, medical facilities and rehabilitation centers, employing 172,000 workers. Patients from around the U.S. come to Georgia for medical care at the state's highly-rated facilities. State-of-the-art facilities are under construction all around the state. Examples of new hospitals recently completed or under construction:

Piedmont Newnan: \$94 million (2012): state-of-the-art 362,000-square-foot, 136-bed hospital. The facility is home to 300 physicians and specializes in heart care, sleep services, women's care, wound and hyperbaric care. The hospital is also home to an advanced cancer center.

WellStar Paulding County: \$92 million (2014): state-of-the-art 295,000-square-foot, 56-bed hospital. Specialized services include cardiology, gastroenterology, orthopedics and others.

Northside Cherokee: \$250 million (2017): When completed, the facility will include the hospital and a medical office building. The facility will house a cancer institute and will include surgical services, including robotics, plastics, neuro, maternity and newborn services with a Level 2 neonatal intensive care unit, a spine center and many other offerings.

GEORGIA'S HOSPITALS ARE RECOGNIZED AS SOME OF THE BEST IN THE WORLD

Children's Healthcare of Atlanta ranks nationally in 10 specialties, including cardiology, cancer treatment and orthopedics. Children's is recognized as one of the nation's top pediatric hospitals.

Emory University Hospital ranks nationally in 12 specialties, including neurology, neurosurgery, ophthalmology, cardiology and heart surgery. Additionally, Emory University won the designation as a National Cancer Institute in 2009, which opens opportunities to millions of dollars more in research.

Shepherd Center is nationally recognized as one of the premier spinal rehabilitation centers in the nation.

Grady Memorial Hospital is the region's premier Level 1 trauma center. Additionally, Grady has one of the country's largest burn centers and is home to the Marcus Stroke and Neuroscience Center. Grady is an internationally recognized teaching hospital.

Northside Hospital has one of the largest medical staffs in the Southeast. The hospital's cancer center diagnoses and treats the largest number of cancer patients in the Southeast. The women's center delivers more babies than any hospital in the nation. The surgical staff performs more robotic procedures than any other southeastern hospital. Additionally, the hospital is highly rated in several adult condition and procedures categories.

Joseph M. Still Burn Center in Augusta is nationally recognized as a leader in burn research and treatment.

Hughston Hospital and Rehabilitation Center in Columbus attracts athletes with injuries from all over the U.S. with its superior orthopedic and rehabilitation care. Additionally, the center recently received the Joint Commission's Gold Seal of Approval for its inpatient stroke rehabilitation program.

Augusta University in Augusta Georgia, one of the nation's first medical schools, is a national leader in cancer, cardiovascular and diabetes research. New breakthroughs and discoveries are coming out of the school daily, supported by unprecedented research funding.

Floyd Medical Center in Rome is an award-winning healthcare system. This facility is No. 1

in Georgia for surgical infection prevention, with centers of excellence in stroke, bariatric surgery and hip and knee replacement.

Northeast Georgia Medical Center in Gainesville is one of the nation's top hospitals. The center is one of only 20 community hospitals to make Truven Healthcare's list of the top 100 hospitals in the country.

Marcus Heart Valve Center at Piedmont Hospital is one of the nation's leading centers for the advancement of heart valve care, as well as innovation in treatment and education for both the patient and doctors.

Marcus Autism Center is a NIH Autism Center of Excellence and is a subsidiary of Children's Healthcare of Atlanta. The center treats more than 5,500 children each year and is one of the largest Autism centers in the nation.

St. Joseph's Hospital, Emory Healthcare of Atlanta is now part of the Winship Cancer Institute. The hospital is one of the leading cancer referral centers in the Southeast and is currently participating in more than 60 clinical trials for all types of cancers. The hospital's Gamma Knife Center leads the region in neurosurgical services and care.

St. Joseph's – Candler in Savannah offers five major centers of excellence, including the Nancy N. and J.C. Lewis Cancer & Research Pavilion, The Heart Hospital and the Mary Telfair Women's Hospital.

WellStar Kennestone Hospital in Marietta was recognized by Consumer Reports and STS (Society of Thoracic Surgeons) for exceptional performance in coronary artery bypass surgery with "highest rating" and "3-star Quality" respectively.

Georgia's Largest Hospitals and Medical Facilities – Locations with 2,000 or More Employees

Hospital	City	Employment	Beds
Northside Hospital	Atlanta	8,000	537
Northeast Georgia Medical Center	Gainesville	6,500	557
Grady Health System/Memorial Hospital	Atlanta	5,000	953
Memorial Health University Medical Ctr	Savannah	4,765	530
Piedmont Hospital	Atlanta	4,700	488
The Medical Center of Central Georgia	Macon	4,600	637
WellStar Kennestone Hospital	Marietta	4,500	633
Eisenhower Army Medical Center	Augusta	3,900	300
Phoebe Putney Memorial Hospital	Albany	3,700	691
Emory University Hospital	Atlanta	3,676	571
University Hospital Augusta	Augusta	3,600	581
DeKalb Medical	Decatur	3,200	451
Athens Regional Medical Center	Athens	3,000	359
Gwinnett Medical Center	Lawrenceville	3,000	353
Floyd Medical Center	Rome	2,700	284
Emory University Hospital Midtown	Atlanta	2,672	475
Veterans Affairs Medical Center Atlanta	Decatur	2,600	239
WellStar Cobb Hospital	Austell	2,500	382
Emory St Joseph's Hospital	Atlanta	2,400	410
Houston Medical Center	Warner Robins	2,300	237
Children's Healthcare of Atlanta	Atlanta	2,300	255
Martin Army Community Hospital	Fort Benning	2,300	57
St Francis Hospital	Columbus	2,160	376
South Georgia Medical Center	Valdosta	2,100	380
Children's Healthcare of Atlanta	Atlanta	2,055	250
Northside Hospital Forsyth	Cumming	2,000	201

Source: Business Wise 2015 Company Database, Georgia Hospital Association

NEW PROTON THERAPY CENTER TO OPEN IN ATLANTA

The Emory Proton Therapy Center, part of the Winship Cancer Institute, is a state-of-the-art cancer treatment center that will deliver proton therapy to the Atlanta region, the state of Georgia and surrounding states. This groundbreaking center, funded by The Georgia Proton Treatment Center, LLC and operated by Emory Healthcare, will span more than 107,000 square feet and is expected to open in the fall of 2016. The facility will further establish Atlanta, Emory and Winship Cancer Institute as centers for biomedical innovation and for advanced cancer care. Additionally, researchers at Winship Cancer Institute will collaborate with Children's Healthcare of Atlanta and Georgia Tech in continued studies on proton beam therapy.

Source: Winship Cancer Institute website

CANCER TREATMENT CENTERS OF AMERICA (CTCA), SOUTHEASTERN REGIONAL MEDICAL CENTER

Cancer Treatment Centers of America's Newnan, Georgia facility opened in 2012. The center's draw is nationwide with 65 percent of all patients coming from out of state. CTCA at Southeastern Regional Medical Center has expanded several times since 2012, increasing employment from 500 to 900 in the span of three years and generating a \$900 million economic impact for the state.

Source: Cancer Treatment Centers of America, Southeastern Regional Medical Center 2014 Annual Report



GROWING MEDICAL PRACTICES SERVING GEORGIA

In addition to the more than 172,000 healthcare professionals employed in Georgia's hospitals, nearly 107,000 doctors, nurses and support staff serve Georgia's communities in more than 11,200 physicians' and practitioners' offices around the state. These physicians and practitioners are highly invested in the communities they serve, and often serve as the major conduit between patients and the rest of the healthcare ecosystem. Demand for professionals in medical practice is expected to increase by 14 percent over the next five years.



Growth in Selected Medical Office Positions 2016 - 2021

Description	Projected Growth in Jobs
Physical Therapists	26%
Occupational Therapists	24%
Nurse Practitioners	22%
Opticians, Dispensing	20%
Physician Assistants	20%
Optometrists	19%
Nurse Anesthetists	18%
Health Diagnosing and Treating Practitioners, All Other	18%
Family and General Practitioners	18%
Medical Records and Health Information Technicians	16%
Registered Nurses	16%
Surgeons	16%
Medical and Clinical Laboratory Technologists	14%
Ophthalmic Medical Technicians	13%
Medical and Clinical Laboratory Technicians	13%
Physicians and Surgeons, All Other	13%
Radiologic Technologists	13%
Licensed Practical and Licensed Vocational Nurses	13%
Internists, General	10%
Chiropractors	10%
Pediatricians, General	10%

Source: EMSI 2nd Q, 2016

6,263

Registered nurses in medical practices

6,427

Physicians and surgeons in
medical practices

1,318

Family and general practitioners

+18%

Family and general practitioner jobs, 2016 to 2021

Source: EMSI 2nd Q 2016

RESULTS-ORIENTED RESEARCH FUELS MEDICAL BREAKTHROUGHS



Ted Ross, Director of UGA's Center for Vaccines & Immunology, GRA Eminent Scholar: Billy Howard photo: "GeoVax Partners with UGA on Zika Virus Vaccine" Global Biodefense, 2.4.2016

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Number of schools receiving NIH awards

7,232

NIH awards granted to
Georgia Colleges & Universities

\$3.1 billion

Funding from NIH to Georgia
Colleges & Universities

Georgia is home to globally-recognized research colleges and universities that receive billions of dollars in funding for healthcare-related research projects. This research impacts the healthcare ecosystem in many ways, but most importantly, it makes a positive difference in the lives of patients around the world.

National Institutes of Health Research Funding by School 2010 – 2016

School	City	Number of Projects	NIH Funding
Emory University	Atlanta	4,361	\$1,947,792,462
Augusta University	Augusta	784	\$303,930,742
University Of Georgia	Athens	791	\$283,599,932
Morehouse School of Medicine	Atlanta	264	\$184,580,601
Georgia Institute of Technology	Atlanta	496	\$181,316,735
Georgia State University	Atlanta	382	\$133,314,666
Clark Atlanta University	Atlanta	30	\$23,837,463
Morehouse College	Atlanta	17	\$8,038,406
Georgia Southern University	Statesboro	17	\$7,245,922
Mercer University Macon	Macon	21	\$6,813,732
Albany State University	Albany	18	\$6,455,487
Spelman College	Atlanta	14	\$5,322,982
Savannah State University	Savannah	19	\$5,195,913
Kennesaw State University	Kennesaw	8	\$1,936,140
Agnes Scott College	Decatur	8	\$1,822,646
University Of West Georgia	Carrollton	1	\$256,720
Valdosta State University	Valdosta	1	\$6,000
Total		7,232	\$3,101,466,549

Source: National Institutes of Health

Recent NIH-supported projects and research centers include:

- Support of Yerkes National Primate Center, Emory University
- Centers of Excellence for Influenza Research and Surveillance, Emory University
- Study of Host Pathogen Interactions, Emory University
- Vaccine-Induced Immunity in the Young and Aged, Emory University
- Nanomedicine Center for Nucleoprotein Machines, Georgia Tech
- Multifaceted Approach to Target Obesity, Augusta University
- Stress-Related Mechanisms of Hypertension Risk, Augusta University
- National Center for Biomedical Glycomics, University of Georgia
- Cancer Research Infrastructure Development, Clark Atlanta University

National Science Foundation Health-Related Funding at Georgia's Top Research Universities (in thousands of dollars, 2005 - 2014)

	Life Sciences	Bioengineering*	Chemistry	Psychology	Total
Georgia State University	\$251,625	\$953	\$46,596	\$73,806	\$372,980
University of Georgia	\$2,216,353	\$6,163	\$84,910	\$169,236	\$2,476,662
Emory University	\$4,042,387	\$65,234	\$141,894	\$66,782	\$4,316,297
Georgia Institute of Technology	\$208,547	\$307,601	\$279,741	\$59,259	\$855,148

Source: National Science Foundation Reported R&D Expenditures

*also includes biomedical engineering

Georgia Research Alliance Eminent Scholars in Healthcare-Related Fields of Study

Eminent Scholar	University	Specialization
Biomedical Engineering and Regenerative Medicine		
Stanislav Emelianov, Ph.D.	Georgia Institute of Technology	Biomedical Imaging & Nanobiotechnology
C. Ross Ethier, Ph.D.	Georgia Institute of Technology	Biomedical Engineering
Don P. Giddens, Ph.D. (Emeritus)	Georgia Institute of Technology	Biomedical Engineering
Ravi Kane, Ph.D.	Georgia Institute of Technology	Cancer Nanotechnology
Steven L. Stice, Ph.D.	The University of Georgia	Reproductive Physiology
Younan Xia, Ph.D.	Georgia Institute of Technology	Nanomedicine
Robert K. Yu, Ph.D., Med.Sc.D.	Augusta University	Molecular and Cellular Neurobiology
Biotechnology		
Arthur S. Edison, Ph.D.	The University of Georgia	Metabolomics
Robert Haltiwanger, Ph.D.	The University of Georgia	Glycoscience
Ravi Kane, Ph.D.	Georgia Institute of Technology	Cancer Nanotechnology
Eric Sorscher, M.D.	Emory University	Pediatric Research
Ming-Hui Zou, Ph.D.	Georgia State University	Molecular and Translational Medicine
Cancer and Human Genomics		
Esteban Celis, M.D., Ph.D.	Augusta University	Cancer Immunology
Walter J. Curran, Jr., M.D.	Emory University	Cancer
Stephen Dalton, Ph.D.	The University of Georgia	Molecular cell biology
William S. Dynan, Ph.D.	Emory University	Molecular Biology
Shafiq Khan, Ph.D.	Clark Atlanta University	Cellular Biology of Cancer
Vasu Nair, Ph.D., D.Sc. (Emeritus)	The University of Georgia	Drug Discovery
Jin-Xiong She, Ph.D.	Augusta University	Genomic Medicine
Binghe Wang, Ph.D.	Georgia State University	Drug Discovery and New Diagnostics
Immunology and Vaccines		
Rafi Ahmed, Ph.D.	Emory University	Vaccine Development
Max D. Cooper, M.D.	Emory University	Immunology
Roberto Docampo, M.D., Ph.D.	The University of Georgia	Tropical and Emerging Global Diseases and Cellular Biology
Julia Hilliard, Ph.D.	Georgia State University	Molecular biology
Eric Hunter, Ph.D.	Emory University	Retroviral Molecular Biology
Jian-Dong Li, M.D., Ph.D.	Georgia State University	Inflammation and Immunity
Robert J. Maier, Ph.D.	The University of Georgia	Microbial physiology
Ted Ross, Ph.D.	The University of Georgia	Vaccines and Viral Immunity
Ignacio Sanz, M.D.	Emory University	Human Immunology
Guido Silvestri, M.D.	Emory University	Comparative Pathology
Samuel H. Speck, Ph.D.	Emory University	Molecular Pathogenesis
Ralph A. Tripp, Ph.D.	The University of Georgia	Vaccine and Therapeutic Development
Informatics and Systems Biology		
James Prestegard, Ph.D. (Emeritus)	The University of Georgia	NMR Spectroscopy
Jeffrey Skolnick, Ph.D.	Georgia Institute of Technology	Computational Systems Biology
Eberhard O. Voit, Ph.D.	Georgia Institute of Technology	Systems Biology
Bi-Cheng Wang, Ph.D.	The University of Georgia	Structural Biology
Peng George Wang, Ph.D.	Georgia State University	Chemical Glycobiology
Ying Xu, Ph.D.	The University of Georgia	Bioinformatics
Neuroscience		
Ami Klin, Ph.D.	Emory University	Autism and Related Disorders
Michael J. Kuhar, Ph.D.	Emory University	Neuropharmacology
Lin Mei, M.D., Ph.D.	Augusta University	Neuroscience
Joe Z. Tsien, Ph.D.	Augusta University	Cognitive and Systems Neurobiology
Personalized and Precision Medicine		
Neal Weintraub, M.D.	Augusta University	Cardiology

Source: Business Wise 2015 Company Database, Georgia Hospital Association

GEORGIA RESEARCH ALLIANCE

The Georgia Research Alliance (GRA) expands research and commercialization capacity in Georgia's universities to launch new companies, create high-value jobs and transform lives.

Since its formation in 1990, GRA has leveraged \$600 million of state funding into:

- \$2.6 billion of direct federal and private investment in Georgia
- 150+ newly launched companies
- 6,000+ high-skill, high-value jobs
- a portfolio of inventions, processes and technologies that benefit humankind

Additionally, through the Georgia Research Alliance, Georgia colleges and universities recruit world-renowned scholars to lead ground-breaking research programs throughout the state.

\$8 million

Healthcare-Related National Science Foundation R&D expenditures at top Georgia universities 2005 – 2014

UNIVERSITY CENTERS FOR RESEARCH

Through dedicated research centers and institutes, Georgia's colleges and universities remain on the leading edge of bioscience and healthcare research. Below are a few of the institutes and centers operating around the state

World-Renowned Healthcare-Related Research Centers and Programs at Georgia Colleges & Universities

School	Centers	Research Focus
Emory University	11 Unique Healthcare-Related Core Labs	Biomedical Imaging, Integrated Genomics, Integrated Cellular Imaging
Emory University	Pediatric Research Center	Partnership in support of children's health issues***
Emory University	Health Systems Institute**	Applies quantitative and qualitative research methods to health services and healthcare delivery sectors
Emory University	Yerkes Regional Primate Research Center	Research on various diseases, including AIDS and Parkinson's
Augusta University	21 Unique Centers and Research Institutes	Research in cancer, nursing, sickle cell, dental health, neuroscience, vascular biology and many additional fields; Institutes conduct studies in molecular medicine and genetics, public and preventative health
Georgia State University	Institute for Biomedical Science	Biomedicine
Georgia Tech	Atlanta Clinical & Translational Science Institute*	An NIH-funded partnership working to translate laboratory discoveries to treatments for patients
Georgia Tech	Department of Biomedical Engineering	Cancer technologies, regenerative medicine, pediatric bioengineering, cardiovascular engineering, immunoengineering
Georgia Tech	Institute for Electronics and Nanotechnology (IEN) (formerly MIRC)	Electronics and Nanotechnology
Georgia Tech	Parker H. Petit Institute for Bioengineering and Bioscience	Bioengineering and Bioscience
Morehouse School of Medicine	14 Unique Research Institutes	Cardiovascular, laboratory animals, primary care, neuroscience, prevention, health disparities and clinical and translational research
University of Georgia	Biomedical and Health Sciences Institute	Promotes interdisciplinary research and instructional efforts in the fields of biomedical and health sciences
University of Georgia	Center for Tropical and Emerging Global Diseases	Medical public interventions for at-risk populations around the world
University of Georgia	Institute of Bioinformatics	Collaboration among biologists, technologists and computational/mathematical scientists to address complex biological problems

Source: Business Wise 2015 Company Database, Georgia Hospital Association

PARTNERSHIPS:

*Atlanta Clinical & Translational Science Institute (Georgia Tech, Emory, Morehouse)

**Health Systems Institute (Georgia Tech, Emory)

***Pediatric Research Center (Emory, Georgia Tech and Morehouse School of Medicine)

GLOBAL AND PUBLIC HEALTHCARE ORGANIZATIONS CALL GEORGIA HOME

Georgia is home to the world's best-known and most well-respected healthcare research and public health organizations. Atlanta is known as the "Public Health Capital of the World," largely because the Centers for Disease Control and Prevention is headquartered here. The presence of the CDC draws scientists and researchers from around the globe and helps attract other healthcare-related businesses and non-profits that need to be close to the world's premier health research organization. The CDC employs more than 7,000 workers, including many of the world's top physicians, scientists and medical researchers.

Source: CDC website, 2015

In addition to the CDC, Atlanta is home to many prestigious organizations operating on a global scale. Here are a few:

The American Cancer Society (HQ): The American Cancer Society employs around 600 workers in Atlanta. The organization is focused on educating the public on cancer prevention, cancer treatment research, programs and services for cancer patients and their families, fundraising and helping pass laws that make fighting cancer easier. Source: American Cancer Society website, 2015

CARE USA (HQ): CARE USA employs around 190 workers in Atlanta. The organization works tirelessly to fight hunger and poverty on a global scale. CARE provides medical services, disaster relief, community development and other humanitarian aid as it is identified. Source: CARE website, 2016

The Arthritis Foundation (HQ): The Foundation employs 150 people in Atlanta and is dedicated to helping arthritis patients and their families by supporting continued research for treatments and a cure for the disease. Source: The Arthritis Foundation website, 2016



Photo: Sabine Wilke, CARE

Rollins School of Public Health: Emory University's Rollins School of Public Health is comprised of six academic departments and hosts more than two dozen interdisciplinary centers. The school is home to more than 200 doctoral-level faculty members, conducting diverse and wide-reaching research projects, including AIDS research, study of church-based health programs, research into cancer causation, Alzheimer's and many other public health issues. Collaboration with local internationally recognized public health organizations, like the CDC, allows Rollins students and scientists to be a part of cutting-edge public health research. Source: Rollins School of Public Health website, 2016

The Emory Global Health Institute: The institute provides an academic framework for global health studies at Emory by developing global health partnerships and preparing the next generation of global health leaders. The institute hires the most talented and experienced faculty and provides research and scholarship opportunities to students. Special events and programs focus on specific global health issues and bring health scholars to Emory. Source: The Emory Global Health Institute website, 2016

The Carter Center: The Carter Center works closely with Emory University in a tireless effort to promote wellness on a global scale. The center also promotes world peace, democracy and economic opportunity in less-developed parts of the world. Source: The Carter Center website, 2016

Gates Foundation names Emory Global Health Institute lead partner in Child Health Network

In May of 2015, the Gates Foundation tapped Emory's Global Health Institute to lead the Child Health and Mortality Prevention Surveillance (CHAMPS) network. The Institute will collaborate with the International Association of National Public Health Institutes, the Centers for Disease Control and Prevention, the Public Health Informatics Institute and Deloitte Consulting in an effort to efficiently collect, analyze and use health data to better employ disease prevention measures on a global scale. Source: May 6, 2015, Emory News Center

BIOSCIENCE COMPANIES THRIVE IN GEORGIA

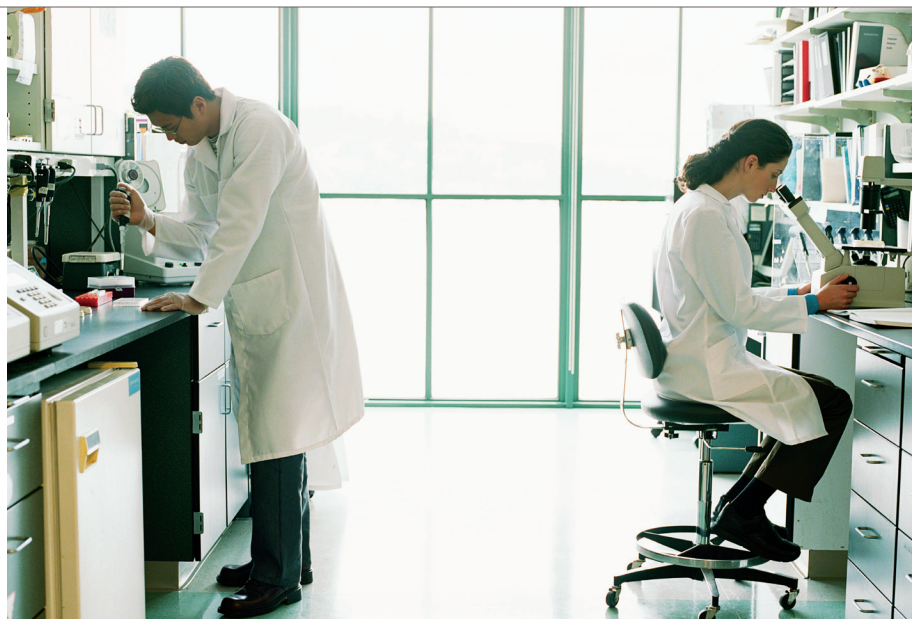
570

Number of bioscience facilities in the state

24,000

Number of workers employed in the state's bioscience industry

Source: Bioscience Industry: Georgia – Home of One of the Nation's Leading Bioscience Clusters, Georgia Power Community & Economic Development, 2016



Restasis: Innovation for Treating Dry Eye

At UGA's College of Veterinary Medicine, Dr. Renee Kaswan began the quest to treat chronic dry eye in dogs, a condition that may cause canine blindness. She discovered that an ophthalmic formula containing cyclosporine, an immunosuppressant and anti-inflammatory, had positive results.

Major pharmaceutical company Allergan developed the UGA innovation for the human health market, and Restasis was approved by the FDA in 2002. Restasis eye drops were the first – and remain the only – FDA-approved prescription medicine for dry eye today.

Source: "What will Georgia's University Scientists Think of Next?" Georgia Research Alliance Website, March 9 2015

Georgia companies engaged in bioscience product manufacturing or healthcare-related services are an integral part of the state's healthcare ecosystem. Private industry demand for the latest technologies and leading-edge medical breakthroughs creates the opportunity for a robust interchange among businesses and the academic, research and healthcare provider communities.

Research Leads to Commercialization

School/Researchers	Breakthrough	Commercial Product	Company
University of Georgia	Treatment of dry eye	Restasis	Allergan
Emory University	Medical imaging software	Emory Cardiac Toolbox	Syntermed
Georgia Tech	Vaccine-delivery patch	Patch in trial phase	Micro Biomedical
Augusta University	Study of ways to inhibit IDO for cancer treatment	IDO inhibitors in trial phase	NewLink Genetics
Emory University	Medical imaging integration platform	Nexus-DRF Digital Imaging System	Varian Medical Systems
Emory University	HIV treatment drugs	Emtriva	Gilead Sciences
Georgia Tech	Heart health device	CardioMEMS HF	CardioMEMS (St. Jude Medical)
Emory University	Drug that helps the body accept a new kidney	Belatacept	Bristol Myers Squibb
Augusta University	Telemedicine system for neurologist evaluating potential stroke patients	REACH	REACHHealth
Emory University	New drug that promotes blood clotting in hemophilia patients	Obizur	Baxalta (now part of Shire)
Georgia Tech	Microelectrode array to evaluate drug effects on tissue	Maestro	Axion BioSystems

Source: Georgia Research Alliance website

BOOMING HEALTHCARE IT

With more than 200 companies employing 15,000 workers, Georgia has more healthcare IT companies than any other state in the nation. As data collection, analysis and dissemination become increasingly vital to the healthcare ecosystem, demand for robust, versatile information systems will grow exponentially.

Healthcare IT providers rely on Georgia's exceptional pipeline of talent coming out of the state's colleges and universities. Additionally, the growing concentration of information technology operations across the state ensures a ready supply of workers with the right skill sets for healthcare IT employers.

6,000
Statewide college
graduates in IT disciplines

+23%
Increase in IT grads 2009 – 2014

Kaiser Permanente Announces New IT Center

April 2015: Kaiser Permanente announced plans for a new Midtown Atlanta information technology center that will employ 900 IT professionals. The IT shared services facility will provide services related to cybersecurity, mobile technologies, patient medical records, consumer technologies, electronic medical record systems and other back office functions.

"We are delighted to bring a new IT campus to Georgia. The Atlanta area is a strong health technology hub with a high availability of tech talent, making it the ideal location for Kaiser Permanente's new IT campus. We're happy to be supporting Georgia's economy with a healthy dose of new high-tech jobs, and to further demonstrate our commitment to improve the health and well-being of the communities that we serve."

Julie Miller-Phipps, president, Kaiser Permanente Georgia

"Kaiser Permanente Bringing 900 IT Jobs to Midtown," Midtown Patch, April 16, 2015

125,000+
IT workers in Georgia

+7.5%
Increase in IT occupations 2015 – 2020

Source: EMSI Information Technology Completions

Major Health IT companies in Georgia

Company	City	Product or Service	Employment
McKesson Technology Solutions	Alpharetta	Electronic Health Records, Computerized Physician Order Entry Solutions	2,450
Greenway Health LLC	Carrollton	Computer Programming Services	900
Sharecare	Atlanta	Internet Online Healthcare Information	700
Philips Healthcare/Customer Solutions	Alpharetta	Healthcare Informatics Solutions for Cardiology and Critical Care Fields	550
Carestream Dental LLC	Atlanta	Imaging, CAD/CAM Software and Medical Practice Management Solutions	400
RelayHealth	Atlanta	Web-based Health Information Exchange Solutions	385
Cotiviti (formerly iHealth Technologies)	Atlanta	Payment Accuracy Provider	350
MedAssets Inc.	Alpharetta	Supply Chain Solutions, Payment Solutions, Business Management Solutions	350
Optum Inc.	Atlanta	Medical Office Management Solutions, Transaction Processing Software	350
Change Healthcare	Atlanta	Management Consulting Services	300
Cypress Care Inc.	Duluth	Pharmacy Benefit Management Solutions and Other Business Management Tools	300
Physicians Practice Group	Augusta	Accounting-Billing Billing Services	280
Allscripts	Sandy Springs	Electronic Health Records Solutions	250
McKesson Medical-Surgical	Suwanee	Electronic Health Records, Computerized Physician Order Entry Solutions	250
RelayHealth	Alpharetta	Web-based Health Information Exchange Solutions	250
Navicare Inc.	Duluth	Cloud-based Healthcare Claims	227
Elekta Inc.	Atlanta	Medical Devices and Data Analysis Tools	225
NextGen Healthcare Info Sys Inc.	Atlanta	Information Systems for Managing Electronic Health Records and Billing, Information Exchange	225
athenahealth	Atlanta	Cloud-based Services for Healthcare and Point-of-Care Mobile Applications	220
ACS Health Solutions (Xerox)	Atlanta	Modeling, Profiling, Benchmarking, Reporting and Health Risk Prediction Tools	200
InHealth Systems & Services	Doraville	Medical Office Management Software, Records Management	200
Palmetto GBA LLC	Augusta	High Volume Medical Claims, Technical Services, Transaction Processing	200
WebMD	Atlanta	Internet Online Healthcare Information	200

Source: Business Wise, Georgia Power Community & Economic Development ICT Database, 2016

EXPANDING BIOPHARMA INDUSTRY

Georgia's world-class colleges and universities graduate scientists, engineers and technicians that are crucial for biopharma operations.

7,255

Statewide college graduates in professional fields related to pharmaceutical development and production

57%

Increase in select engineering, science and technician grads 2009 – 2014

1,800+

Currently employed in biopharma industry

Source: EMSI Pharmaceutical-Related Completions

Baxalta (now part of Shire) Announces New Bio-Manufacturing Facility

April 2012: Baxalta (formerly Baxter International) announced plans to build a \$1 billion bio-pharmaceutical manufacturing facility east of Atlanta. When completed, the location will employ 1,500 across the state, with potential for hundreds more. Baxalta's new Georgia facility will manufacture plasma-based therapies that treat chronic and life-threatening illnesses.

"The manufacture of high-quality biologic medicines is critical for serving the needs of patients around the world. We're pleased to partner with the people of Georgia to support Baxter's core mission of saving and sustaining lives."

Robert L. Parkinson, Jr., Chairman and CEO of Baxter

"Baxter International selects Georgia for \$1 Billion Bio-Pharmaceutical Manufacturing Investment," Press Release, 4.19.2012, Office of the Governor

Training Center for BioScience Workers Opens in Newton County

Educating the 1,500 workers needed to operate the Baxalta facility, which will produce plasma-derived therapies for immune deficiencies medications, is paramount to the company's success in Newton County. In April of 2015, the company's \$14 million training facility opened. The facility is operated by Georgia's Quick Start program, a unit of the Technical College System of Georgia, and includes a variety of labs that provide hands on training for Baxalta employees.

"I walked in and the first thing I thought and said is 'Wow' It is such an inspiring facility. First of all, it's beautiful. I'm also impressed about what it's going to mean for our community. I think it's a key symbol of what we're committed to for our patients that we serve and also for the state of Georgia."

Jacobi Leonardi, Executive Vice President, Immunology, Baxalta

"Georgia Celebrates BioScience Training Center," The Convington News, September 12, 2015

Major Biopharma Companies in Georgia

Company	City	Product/Service	Employment
Baxalta (Shire)	Atlanta	Plasma fractionation for biologic medications including immunoglobulin therapy products	1,500*
Merial Ltd. (3 locations)	Duluth, Athens and Gainesville	Animal health products including drugs for heartworm prevention and various	1,165
UCB Inc.	Smyrna	Pharmaceutical preparations for treatment of arthritis, seizures, Parkinson's, and various other conditions	350
Dendreon Corp.	Union City	Immunotherapy drugs for treating cancer	280
Pharma Tech Industries	Royston	Pharmaceutical preparation processing and packaging, powder, effervescent, solid and capsule	250
Mikart Inc.	Atlanta	Pharmaceutical preparation processing and packaging	230
Noramco Inc.	Athens	Pharmaceutical ingredients used in medicinal analgesics	180
Alkermes LLC	Gainesville	Neuroscience-based biotechnology company that is focused on discovering, developing, manufacturing and marketing advanced therapies in neurology, autoimmune diseases and severe pain	170
Pfizer Consumer Healthcare	Albany	Develops, manufactures and markets leading non-prescription medicines, vitamins and nutritional products	98
Private Label Nutraceuticals LLC	Atlanta	Manufactures nutritional supplement	75
Osmotica Pharmaceutical Corp.	Marietta	Over the counter and prescription pharmaceuticals	50

Source: Business Wise and Georgia Power Community & Economic Development Biosciences publication 2016

*once fully-operational

LEADING-EDGE MEDICAL DEVICE MANUFACTURERS

Medical device manufacturing operations rely on engineering and production expertise for productivity and profitability. Georgia colleges and universities produce graduates in business, engineering, operations management and a host of other fields that are vital to the success of the state's medical device companies.

11,580

Statewide college graduates in professional fields related to medical device manufacturing

7,000

Workers employed in medical device manufacturing

Source: EMSI Medical Device Manufacturing Professional Completions, Bioscience Industry: Georgia Home of One of the Nation's Leading Bioscience Clusters, Georgia Power Community & Economic Development, 2016

Major Medical Device Manufacturers in Georgia

Company	City	Product/Service	Employment
Alcon Laboratories Inc.	Duluth	Researches, develops and manufactures contact lenses and lens care products	1,100
Covidien	Augusta	Manufactures medical devices and supplies, diagnostic imaging agents and pharmaceuticals	580
Porex Corp.	Fairburn	Develops, manufactures and distributes proprietary porous plastic components incorporating advanced filtration, venting, diffusing and capillary technologies and properties	350
Immucor Inc.	Norcross	Specializes in the area of pre-transfusion diagnostics offering automated instrument-reagents systems that detect and identify certain properties of blood before transfusion	320
Showa Best Glove Inc.	Menlo	General purpose, chemical resistant, cut resistant, disposable, specialty and high tech gloves	260
Micromeritics Instrument Corp.	Norcross	Manufacturer of particle-size analyzers, surface area analyzers, pore volume analyzers and density analyzers; provider of materials test and evaluation services	250
EndoChoice Inc.	Alpharetta	Manufactures diagnostic and imaging devices	250
Elekta Inc.	Atlanta	Develops tools and treatment planning systems for radiation therapy and radiosurgery, as well as workflow enhancing software systems across the spectrum of cancer care	225
Chart Industries Inc.	Ball Ground	Manufactures equipment used throughout the liquid gas supply chain for a wide variety of cryogenic and heat-transfer applications	200
Therapak Corp.	Buford	Designs and develops thermoform trays, EPS foam products, polyethylene bags, corrugated boxes and chipboard cartons; Therapak has assembled retail products, syringes, blood collection kits and many other OEM products	200
CR Bard Inc./Global Distribution	Covington	Focuses on disease state management in three key areas: vascular, urology and oncology	180
Medline Industries Inc.	Lithia Springs	Provider of medical supplies	150
OPTI Medical Systems Inc.	Roswell	Patient testing market targeting small to medium-sized hospitals	143
Specialty Appliances Inc.	Cumming	Full-service orthodontic laboratory	100
Theragenics Corp.	Buford	Medical device company serving the surgical products and prostate cancer treatment markets	100
Amendia Inc.	Marietta	Manufactures and distributes custom medical devices	100
QSpex Technologies Inc.	Alpharetta	Manufacturer of contact lens production equipment	100

Source: Business Wise and Georgia Power Community & Economic Development Bioscience publication 2016

MEDICAL LABORATORIES AND SERVICE CENTERS GROWING IN GEORGIA

Georgia is home to more than 600 medical laboratories and service centers including the American Red Cross Southeastern Blood Services operation. These facilities employ nearly 5,000 workers and are expected to grow by 16 percent over the next five years.

“Red Cross blood center is nation’s 3rd-largest”

The American Red Cross Southern Blood Services regional center in Douglasville has grown to become one of the nation’s largest, processing and distributing blood products to hospitals in three states. “Whenever someone donates blood, it comes back to our center where it’s run through an assembly-line process,” said April Phillips, the regional center’s director of communications. “All the blood comes in at one end of the lab and moves down the line until it’s ready to distribute.”

Source: *The Atlanta Business Chronicle*, September 20, 2013

Major Testing Laboratories and Blood Services

Operation	City	Product/Service	Employment
Quest Diagnostics	Tucker	Lab and healthcare services	1,000
Quintiles Laboratories Ltd.	Marietta	Bio and pharmaceutical services offering clinical, commercial, consulting and capital solutions	575
American Red Cross/ SE Blood Services	Douglasville	Blood bank	500
LabCorp.	Tucker	Esoteric testing, genomics, clinical and anatomic pathology	350
CSI Laboratories Inc.	Alpharetta	Cancer diagnostics and pathology	185
Genova Diagnostics Inc.	Duluth	Nutritional, metabolic and toxicant testing	180
Clinical Laboratory Services	Winder	Clinical laboratory testing	180
Emory Genetics Laboratory	Decatur	Clinical laboratory and prenatal molecular testing	120
WuXi AppTec Inc.	Marietta	Infectious disease testing with a focus on virology	110
QualTex Laboratories	Norcross	Infectious disease testing for blood banks	110
LabCorp.	Columbus	Esoteric testing, genomics, clinical and anatomic pathology	80
Emory Medical Laboratories	Atlanta	Standard and esoteric clinical laboratory services	60
Confirmatrix Laboratory Inc.	Lawrenceville	Clinical quantitative urine and oral fluid drug testing	60
Clinical Pathology Laboratories SE	Augusta	Medical testing laboratory	50
LabCorp.	Savannah	Esoteric testing, genomics, clinical and anatomic pathology	50
Amendia Inc.	Marietta	Manufactures and distributes custom medical devices	100
QSpex Technologies Inc.	Alpharetta	Manufacturer of contact lens production equipment	100

Source: Business Wise and Georgia Power Community & Economic Development Bioscience publication, 2016



TALENT LOVES GEORGIA

Georgia's internationally-recognized colleges and universities attract world-class students. Fortunately, many graduates remain in the area after completing school because career opportunities are abundant and Georgia is a low-cost, fun place to live.

Creative and talented workers appreciate the diversity of industries and occupations in Georgia's job market. Talent is attracted to the entrepreneurial spirit of the state as well as Georgia's high-profile companies, including Atlanta's 16 Fortune 500 companies. These corporate giants are highly invested in Georgia's towns and cities and hire young, well-educated workers from around the globe.

COST OF LIVING

Companies and workers moving to Georgia enjoy a cost of living and cost of doing business below the national level. Cities across the state are highly affordable, from the cost of groceries to the cost of buying a home.

Cost of Living Index in Major Georgia Cities:

Location	Composite Index	Grocery Items	Housing	Utilities	Transportation
Albany GA	89.9	102.1	69.5	95.6	102.6
Atlanta GA	99.6	104.3	92.3	98.2	102.2
Marietta GA	93.6	102.0	83.2	100.0	94.2
Augusta-Aiken GA-SC	89.6	103.5	74.6	85.1	71.9
Columbus GA	90.3	98.4	73.6	69.1	93.8
Dalton GA	87.9	94.6	69.5	104.2	95.2
Savannah GA	89.7	93.5	65.8	109.4	96.7
Statesboro-Bulloch County GA	87.0	94.6	72.7	97.4	86.1
Valdosta GA	91.2	102.2	81.7	100.9	94.1

Source: C2ER Cost of Living Index, 1st Quarter 2016

GEORGIA'S DIVERSITY

Employer diversity is one of Georgia's most appealing features. The state's workforce is equally diverse and is becoming more so each year. Growing Asian and Hispanic communities add fresh and unique character to Georgia's expanding workforce. Atlanta is home to 65 foreign consulates and Georgia Tech is host to 4,300 international students representing 110 countries.

ATLANTA'S FORTUNE 500



THINGS TO DO

Cities across Georgia possess a creative energy that is infectious. The music, arts and culture scene includes nationally-renowned festivals and museums that draw millions of visitors annually. Georgia's diverse landscape boasts the southernmost point of the Appalachian Trail to the north and the natural beauty of the state's Atlantic barrier islands to the southeast. State and national parks across Georgia provide breathtaking scenery and a glimpse of the state's rich history.

For the sports enthusiast, Georgia is home to four major professional teams, the Braves (baseball), the Falcons (football), the Hawks (basketball) and the Georgia Swarm (lacrosse). College teams across the state participate in every sport from baseball to lacrosse to gymnastics. The state hosts a variety of nationally and internationally acclaimed sporting events. The Peachtree Road Race is the largest 10K in the world, with 90,000 runners braving the grueling route every July 4th.

The state's amazing restaurants, burgeoning wineries and eclectic brew houses are favorite destinations for locals and visitors alike.

The healthcare industry is well represented among Atlanta's top employers.

Five of Atlanta's top Employers are in Healthcare

(healthcare companies highlighted)

Company	Employment
Delta Air Lines	27,000
Emory	23,872
Home Depot	12,597
WellStar	12,500
Northside Hospital	8,200
Children's Healthcare of Atlanta	10,000
Lockheed Martin	7,420
CDC	7,118
Cox	6,906
SunTrust	6,826

Source: *The Atlanta Business Chronicle*, 2016 Book of Lists and Children's Healthcare of Atlanta

GLOBAL ACCESSIBILITY

“Georgia helps UPS move life-saving products to the world”

“The Southeast is an important market in healthcare because of the patient population density and aging population that’s here. Georgia plays a crucial role in the regional distribution for the United States. Georgia’s highway and rail systems allow for efficient distribution logistics, which result in a positive environmental impact through reduced fuel and handling costs as we strive to maintain value for our customers.”

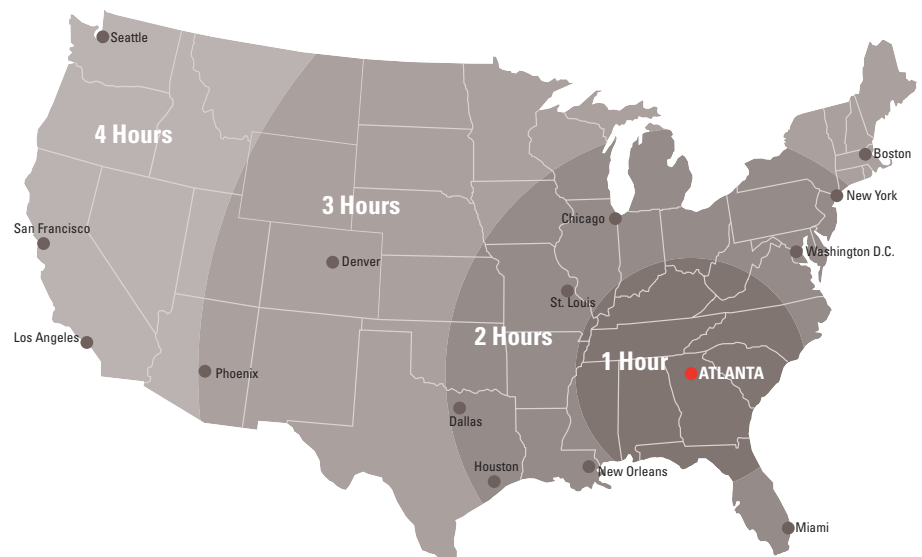
David Quintilio, VP Operations, UPS Supply Chain Solutions

Source: Cold Chain Storage Case Study, Georgia Department of Economic Development

Georgia’s transportation assets make it easy for patients traveling to Georgia for healthcare. Hartsfield-Jackson Atlanta International Airport is Georgia’s gateway to the world, with 30 airlines providing non-stop service to 218 international and domestic destinations. In 2015, 101 million passengers moving through Hartsfield-Jackson, making the airport the world’s most traveled. Additionally, Georgia’s interstate highway system is one of the best maintained in the country. Four major interstates, I75, I85, I95 and I20, connect Georgia to the rest of North America. Atlanta is within a 2-day trip from 80 percent of the nation’s major markets. Georgia businesses are served by two major rail providers, Norfolk Southern and CSX. These carriers serve every major port in the eastern U.S. and maintain 43,000 miles of track.

The state’s extensive cold chain logistics infrastructure relies heavily on the airport, railroads and interstate network to transport medical materials safely. Atlanta-based UPS is the largest mover of FDA-regulated products in the world.

Flight Times from Hartsfield-Jackson Atlanta International Airport



Georgia Power has been helping companies locate in our state for nearly 90 years. We offer a full array of products and services available at no cost. To receive confidential, proven assistance, please contact one of our experienced professionals:

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