
Higher education sparks jobs, creativity, and entrepreneurship in metro Atlanta.
Atlanta is the hometown of AT&T Mobility and we’re thrilled to launch the newest AT&T Foundry here at Georgia Tech. With its great mix of FORTUNE 500 companies, world-class research institutions, and a strong workforce, Atlanta can truly become one of the world’s premier locations for innovation.

- Ralph de la Vega, President & CEO, AT&T Mobility
Metro Atlanta is a National Leader in Higher Education

Metro Atlanta’s higher education system is a vital component to the economic success of the region. With over 275,000 students enrolled in 66 institutions, our colleges and universities fuel our businesses with talent, discovery and innovation. The research undertaken by Human Capital Research Corporation in 2013 confirms Metro Atlanta’s top ten position for all key indicators for higher education. Importantly, in five short years, our higher education system has grown research and development expenditures by 46%. Metro Atlanta leads the nation in growth in enrollment of African American students and in continuing education opportunities. The region excels at graduating engineers with the third highest number of bachelors degrees awarded in the nation. Our strength in engineering, coupled with being the 4th fastest-growing metro for technology degrees awarded and the establishment of Atlanta as the nation’s leading digital media super-hub, sets the metro Atlanta region as a national leader for innovation.
Metro Atlanta’s growth and prosperity means vitality and new opportunities for every business. Metro Atlanta’s growth and prosperity makes us the premier place to work, live, play and learn, enriching our lives at every level. Working together, we make a tremendous difference in Atlanta, and continue to build our legacy for generations to come.
# Savannah College of Art and Design named one of ‘America’s Best Colleges for Entrepreneurs’
(Forbes Small Business magazine)

# Metro Atlanta is a digital media super-hub with nearly twice the number of digital media career opportunities per capita as other U.S. cities.

# Metro Atlanta is the #1 city for Young Entrepreneurs
(Kauffman Foundation “Index of Entrepreneurial Activity,” April 2013)

# Savannah College of Art and Design named one of the World’s Best Design Schools
(BusinessWeek)

# Metro Atlanta is the #1 city for New College Graduates in 2013
(Forbes & Rent.com March 2013)

# VentureLab at Georgia Tech ranks #2 University Business Incubator in the World
(UBI Index, July 2013)

The Bioscience industry and university research, plus the U.S. Centers for Disease Control and Prevention, have a $20 billion annual economic impact on Georgia and employ more than 94,000 people
(2012 Shaping Infinity Report)
Spelman College is a top producer of African-American female graduates who earn doctoral degrees in science and engineering. The College continues to achieve this accomplishment, in part, through corporation collaborations with partners such as Georgia Power. This partnership works to ensure the successful matriculation of our students in these disciplines through mentoring and scholarship support.

“Women continue to be underrepresented in all fields of engineering,” said Leslie Sibert, vice president of distribution at the Georgia Power and co-founder of the Spelman College Georgia Power mentoring program. “That’s why it is so critical to have role models and mentoring opportunities so that we can improve the retention of women in the field of engineering.”

The Georgia Power mentoring program at Spelman annually targets five students and prepares them for their transition to an engineering school and into the work force. Mentoring begins each fall with an introductory reception, the first of four formal programs for the mentors and mentees who stay paired for the entire school year.

“[Georgia Power] piloted a professional mentoring program at Georgia Tech and found it to be very successful. In 2008, Spelman students were added to the program,” explained Sibert. “When we do events for the mentors and mentees, it allows all the professional women participating to network with both female students from Spelman and Georgia Tech.” Often powerful and life-changing, many of the relationships continue beyond the school year, according to Sibert.

In addition to the mentoring program, Georgia Power provides scholarship support to engineering students at Spelman. Through this partnership, five educational scholarships at $5,000 each are awarded to talented students pursuing degrees in engineering. Each recipient has academic promise and a demonstrated financial need. Recently, Georgia Power announced an additional gift of $25,000 to continue this support.

“It is my primary responsibility to ensure our engineering students not only excel academically, but are properly exposed to the industry, and prepared for advanced technical careers upon graduation,” explained Retina Burton, coordinator for the Dual-Degree Engineering Program at Spelman. “There are three areas in which corporations can have a great impact on our students, one of which is mentoring. The other two areas are scholarship and technical development. Georgia Power has addressed all three areas through their corporate scholarship support and mentoring program.”

Fallon Clark, a junior who participated in the program during her first year at Spelman, said she gained invaluable experience. “It was an amazing experience to work with so many talented women engineers,” said Clark. “Participating in this program and learning from my mentor Kelsey Rooks let me know that I can achieve any goal that I set my mind to.”

“Fallon Clark was my mentee in the Women in Engineering mentoring program at Georgia Power. I got involved with the program because it’s so important to me to encourage young women to excel in an engineering/technical career,” said Kelsey Rooks, distribution engineer, at Georgia Power. “My goal was to prepare Fallon for the transition from the academic environment to a professional role in the technical arena. From building this relationship, I want my mentee to feel that she can contact me once she enters the workforce to provide continued guidance and encouragement.”

– Original story by Lorraine Robertson
### Growth in Enrollment of African American Students (Full Time Enrollment) 
**Fall 2005 - Fall 2010**

**Metro Areas**

**#1**
Spelman College is No. 1 nationally for Historically Black Colleges and Universities
(U.S. News & World Report, Sept. 2013)

**#2**
Morehouse College is No. 2 nationally for Historically Black Colleges and Universities
(U.S. News & World Report, Sept. 2013)
Ami Klin, Ph.D., and his team’s groundbreaking research helps diagnose autism earlier in young children and provides much-needed support and medical services to those who need it most. Klin is Director of the Marcus Autism Center at Children’s Healthcare of Atlanta and Professor and Division Chief, division of autism and related disorders in Emory University’s Department of Pediatrics.

Klin and his team developed eye-tracking technologies to screen children for signs of autism, using concealed cameras to zoom in on children’s eyes and monitor the movement of their pupils to track what objects or people they are watching on the TV screen.

This technology is helping researchers understand how autism unfolds during early childhood development and allows them to detect markers of autism as early as infancy, which can lead to earlier interventions and treatments when the condition is most malleable.

This research comes at a critical moment: autism is the fastest growing developmental disability in the U.S., affecting one in 110 children nationally— and one in 98 in Georgia. Autism is now more common than childhood diabetes, or all childhood cancers put together, according to the Marcus Autism Center.

“Treating a child with autism costs about $80,000 a year,” Klin says, and “some estimate that autism costs the U.S. about $140 billion annually.”

Klin is a recognized leader in autism research. A Georgia Research Alliance (GRA) Eminent Scholar and Emory professor of pediatrics, he was recruited to Atlanta by philanthropist and Home Depot co-founder Bernie Marcus in 2011 after 20 years at Yale. He brought his 18-person research team and their families here, too, because he believed in the vision that he and Marcus shared for growing a national medical center for autism research and services.

In 2012, Emory received an $8.3 million award from the National Institutes of Health (NIH) to create an NIH Autism Center of Excellence — a collaborative research effort among Marcus Autism Center, the Department of Pediatrics in Emory University School of Medicine, and Yerkes National Primate Research Center. Research partners include the Centers for Disease Control and Prevention (CDC), Georgia Tech, the Rollins School of Public Health, and the NIH-sponsored Atlanta Clinical and Translational Science Institute.

The research at Marcus Autism Center is leading to earlier diagnoses for children: five years ago, the youngest age for diagnosis was around three years old. Now, researchers can diagnose autism at 18 months of age, and can even detect signs of risk in infants.

The Marcus Autism Center provides diagnosis, family education, behavioral therapy, and support services to children and families with autism. The Center conducts research on autism spectrum disorders (ASDs), with the goal of determining the disorders’ causes and the best treatments for them. Its chief academic partner is Emory School of Medicine.

- Original story by Mary Loftus
WHAT IF A VIRUS THAT INVADES A CELL COULD BE KEPT FROM REPLICATING ITSELF?

That simple question is at the heart of research being conducted by Ralph Tripp, a renowned viral immunologist and GRA Eminent Scholar at the University of Georgia. And the answer has profound implications on developing new ways to fight disease and illness.

Tripp and his research team have broken new ground in understanding how cells in the body can silence genes to inhibit the signaling required to replicate a virus – a process known as RNA interference (RNAi). Based on that new knowledge, Tripp has now developed several drugs to treat respiratory viruses such as respiratory syncytial virus (RSV), which poses a significant threat to the very young and elderly.

This autumn, one of Tripp’s drugs targeting RSV will enter the final phase of human testing required to be authorized by the Food and Drug Administration. If approved, it would be the first of its kind to target a specific virus – and would help save thousands of lives each year in the U.S. alone.

But that new drug treatment is only the beginning of what Tripp’s research could lead to.

For the first time, Tripp and his research team have shown that the RNAi gene silencing process they’re exploring could also be a tool to develop a new class of vaccines.

In a study published in the December 2009 issue of the Journal of Virology, Tripp and UGA doctoral student Wenliang Zhang showed that administering a “small interference RNA” (siRNA) drug in mice prevented RSV infection – it actually provoked a vaccine-like immune response to infection.

“This is the first study of its kind to show that siRNA can be used to improve the immune system’s memory response to an infectious agent,” Tripp says. “We were able to reduce the replication of the virus enough to prevent the development of disease, yet still induce potent immunity later on.”

Preliminary data from Tripp’s research shows that a similar approach would likely have the same effect on other diseases. So he’s embarked on new efforts to develop synthetic anti-viral drugs that act like vaccines for influenza and a variety of other significant human viruses.

- Original story by the Georgia Research Alliance

Emory University ranks fifth nationally for licensing revenue per dollar spent on research.  
(Chronicle of Higher Education, Aug. 2013)
The cochlear implant is widely considered to be the most successful neural prosthetic on the market. The implant, which helps deaf individuals perceive sound, translates auditory information into electrical signals that go directly to the brain, bypassing cells that don’t serve this function as they should because they are damaged.

Despite their prevalence, cochlear implants have a long way to go before their performance is comparable to that of the intact human ear. Led by Pamela Bhatti, an assistant professor in the School of Electrical and Computer Engineering, a team of researchers at the Georgia Institute of Technology has developed a new type of interface between the device and the brain that could dramatically improve the sound quality of the next generation of implants.

A normal ear processes sound the way a Rube Goldberg machine flips a light switch – via a perfectly-timed chain reaction involving a number of pieces and parts. First, sound travels down the canal of the outer ear, striking the eardrum and causing it to vibrate. The vibration of the eardrum causes small bones in the middle ear to vibrate, which in turn, creates movement in the fluid of the inner ear, or cochlea. This causes movement in tiny structures called hair cells, which translate the movement into electrical signals that travel to the brain via the auditory nerve.

As an electrical engineer, Bhatti sees the current electrode configuration as a significant barrier to clear sound transmission in the current device. “In an intact ear, the hair cells are plentiful, and are in close contact with the nerves that transmit sound information to the brain,” says Bhatti. “The challenge with the implant is getting efficient coupling between the electrodes and the nerves.”

Contemporary implants contain between 12 and 22 wire electrodes, each of which conveys a signal for a different pitch. The idea is the more electrodes, the clearer the message.

So why not add more wire electrodes to the current design and call it a day?

Much like house-hunting in New York City, the problem comes down to a serious lack of available real estate. At its widest, the cochlea is 2 millimeters in diameter, or about the thickness of a nickel. As it coils, it tapers down to a mere 200 micrometers, about the width of a human hair.

“While we’d like to be able to increase the number of electrodes, the space issue is a major challenge from an engineering perspective,” says Bhatti.

With funding from the National Science Foundation, Bhatti and her team have developed a new, thin-film, electrode array that is up to three times more sensitive than traditional wire electrodes, without adding bulk. Unlike wire electrodes, the new array is also flexible, meaning it can get closer to the inner wall of the cochlea. The researchers believe this will create better coupling between the array and the nervous system, leading to a crisper signal.

According to Bhatti, one of the biggest challenges is actually implanting the device into the spiral-shaped cochlea. “We could have created the best array in the world, but it wouldn’t have mattered if the surgeon couldn’t get it in the right spot,” says Bhatti.

To combat this problem, the team has invented an insertion method that protects the array and serves as a guide for surgeons to ensure proper placement. The research is being done in collaboration with Georgia Regents University.

Before it’s approved for use in humans, it will need to undergo rigorous testing to ensure that it is both safe and effective.

The most important thing, according to Bhatti, is not to lose sight of the big picture. “We are always designing with the end-user in mind,” says Bhatti. “The human component is the most important one to consider when we translate science into practice.”
Georgia Tech is No. 1 in the nation in engineering degrees awarded to all minority students, No. 1 for engineering degrees to women, and No. 1 for graduate engineering degrees to Hispanics.

#1 metro for Industrial/Manufacturing/Operations Engineering Bachelors Degrees Awarded

#1 metro for Aerospace/Aeronautical/Astronautical Engineering Bachelors Degrees Awarded

#2 metro for Biomedical/Bio Engineering Bachelors Degrees Awarded

#5 metro for Mechanical Engineering Bachelors Degrees Awarded

#6 metro for Chemical Engineering Bachelors Degrees Awarded

#27% growth in Total Engineering Bachelors Degrees Awarded (2006-2011)

#9 metro for Electrical Engineering Bachelors Degrees Awarded

Georgia Tech’s undergraduate and graduate engineering colleges rank in the top five, according to U.S. News & World Report.
Children with cerebral palsy face many challenges, especially as they develop motor skills and muscle control needed to interact with their environments. Robots might just be the answer to help these children with their disability.

“Children with cerebral palsy don’t have very much control over their movements,” Chen said. “Even though they see and understand, they can’t easily repeat modeled movements. So, we decided to use a robot as a playmate and at the same time ask the robot to become an evaluation tool.”

Georgia State University’s Yu-Ping Chen, assistant professor of physical therapy, with Ayanna Howard, a professor of robotics at Georgia Institute of Technology, are exploring how specially designed robots made for children can help improve their motor skills and muscle control.

Cerebral palsy is an umbrella term for brain lesions resulting from injury or illness, whether they occurred before or after birth. The severity of the lesions varies from individual to individual, as well as the impact of the diagnosis on their lives.

Many people living with cerebral palsy have been helped by assistive robots, called “contact robots,” but these robots are designed for adults, not children.

Chen and Howard want to design a robot that is scaled down for children and resembles a toy so a child will fully interact with it.

The researchers will also program the robot to record data, placing video cameras in the robot’s eyes to record the range and speed of the child’s movements in order to evaluate the child’s therapy.

With the ability to tailor therapy through programming the robot and the means to collect data, therapists will be able to create personalized therapy for children with cerebral palsy.

The research is funded by the National Science Foundation.
Across Metro Atlanta, the common cry is, “Innovate!” The challenge is where to find that new thinking. How can entrepreneurs and companies get beyond old ideas and see products, services, and customers with new eyes? At the Savannah College of Art and Design (SCAD), the answer is simple: Students. What SCAD students love is a challenge. That’s why so many Fortune 100 companies have been bringing their thorniest design challenges to SCAD, through the university’s Collaborative Learning Center, or CLC. Many of these companies and partners are based right here in Atlanta, such as Coca-Cola, AT&T, and Chick-fil-A.

Here’s how it works:
The corporate partner brings a defined business challenge – in the form of a creative brief – to the CLC. For example, Chick-fil-A recently approached SCAD to help research and develop a new outdoor environment design for their restaurants. The CLC then helps identify which SCAD faculty and students are best suited to address that need. After 10 weeks of ideation, research, fieldwork, and prototyping, SCAD students present their ideas in a final client presentation to company executives and representatives.

Typically, the results of CLC projects are kept confidential, but the real endgame is no secret: it’s a win-win for all. Companies get the new thinking they so desperately need, and students earn course credit while gaining priceless real-world experience on real-world projects. And many CLC partners end up hiring SCAD students as interns, designers, brand managers.

Other recent SCAD CLC projects include students working with bmobile to develop a line of branded mobile phone products and interface designs; students working with Chick-fil-A to research, develop, and design concepts for team member apparel that reflect the premium fast-service brand; and students working with Coca-Cola to research and develop new cross-promotional marketing concepts.

Other Atlanta-based SCAD partners include the Alliance Theater, BET, Fox Theatre, and the Centers for Disease Control, as well as national partners Microsoft, FOX Sports, Reebok, Fisher-Price, Whole Foods, General Electric, Hershey’s, Hewlett-Packard, and others. In the last five years, more than 1,000 SCAD students have worked with 130 companies and community partners – including several Fortune 100 companies.

- Original story by John Paul Rowen

With more than 100,000 technology workers in Georgia, and technology superstars such as AT&T Mobility, NCR, IBM, Wipro, AirWatch, Turner Networks, GE Energy and others, Atlanta has a leading edge in software, internet security, transaction processing, digital content, mobility, wireless applications and services, smart grid technologies and more.
Ten years ago, with her children grown and her home in Atlanta well established, Donna Brazzell decided she wanted to re-enter the working world. She had a bachelor’s degree in chemistry, but that field didn’t fit her anymore.

Browsing through a Georgia State course catalog, Donna realized just how many options were open to her – some of which, such as a degree in public administration and non-profit management, hadn’t even really existed when she went to school the first time around. “I started off in the certificate program because I hadn’t been back in school for 25 years and I wasn’t real sure about things,” she says, “but once I was in there, I knew I loved it. And within a couple months I’d switched over to the graduate program.”

The classes were challenging, and the work wasn’t easy. But thanks to a classroom atmosphere that emphasized the sharing of ideas over rote learning, she says she was never bored. “Many of my classmates were working at Atlanta nonprofits. Their practical experience, merged with the professors’ theory- and knowledge-based teaching, led to some phenomenal class discussions.”

After earning her master’s in 2005, Donna wasted no time in putting her degree to use. She worked for the American Lung Association for a couple years and has been the executive director of the DeKalb Library Foundation for the last six. “I really enjoy my job every single day,” she says. “And I have used almost every single thing that I learned while I was in school. I know I couldn’t do my job today without all the knowledge and the experience that I got in class and learning from other people.”

“This place has given me so much,” she says. “It’s really reshaped my whole future. I’ve gotten a second career — it’s exciting, I’m on a new adventure, learning new things and growing, and that’s a real gift to me.”

- Original story by Doug Gillett
**GLOBAL ACCESS**
People and products can easily connect to the world from Atlanta. Hartsfield-Jackson Atlanta International Airport, the world’s most-traveled airport for 15 consecutive years, offers nonstop flights to more than 70 international destinations in 45 countries, as well as to 160 domestic destinations. With 14 all-cargo carriers and the Georgia Foreign Trade Zone, Atlanta’s airport connects products to the global marketplace.

**STRATEGIC LOCATION**
The area’s transportation infrastructure of air, rail, road and ocean makes Atlanta a strategic location. More than 80% of the U.S. population is within a two-hour flight of Atlanta. Trucks can reach more than 80% of U.S. markets within two delivery days from Atlanta. Over 40% of North American manufacturing and distribution locations are within a 500 mile radius of Atlanta.

**INTERNATIONAL CONNECTIONS**
Metro Atlanta is home to approximately 2,700 foreign-owned business operations, employing approximately 130,000 people. And, 65 countries are represented in metro Atlanta with 67 full & honorary consulates and trade offices, and 48 bi-national chambers of commerce.

**BUSINESS CAPITAL OF THE SOUTHEAST**
Metro Atlanta thrives as a regional business hub with a pro-business, cost-effective environment. As the 10th-largest economy of all metro areas in the U.S. and the largest economy in the Southeast region, metro Atlanta is home to a critical mass of companies. Atlanta offers the lowest relative business location costs of the top 10 largest U.S. metros, as well as tax incentive programs for job creation and investment, and a business-friendly community with engaged community leaders.

**QUALITY OF LIFE**
Metro Atlanta is a great place for all ages to live. Moderate climate enables year-round outdoor activities. Housing, consumer goods and services are relatively less expensive than in other major metro areas. A strong network of quality hospitals and physicians offers expertise and resources for Atlantans to live well.

**TALENT & EDUCATION**
Atlanta offers a diverse workforce with the education, work ethic and skills for businesses. With 66 colleges and universities enrolling more than 275,000 students each year and 7 technical colleges enrolling more than 60,000 students each year, Atlanta offers a pipeline of talent.

**INNOVATION & ENTREPRENEURSHIP**
The higher education system in metro Atlanta seeds the regional innovation and entrepreneurial community. From 2007-2011, universities and colleges filed more than 3400 invention disclosures, executed more than 1100 license and option agreements and received over 500 U.S. patents.
All data in this study is derived from the Integrated Post-Secondary Education Data System (IPEDS) Survey. The years of the survey are Fiscal 2011 and Fiscal 2006. In the usage of Fall Cohort data, this refers to Fall 2010 and Fall 2005. This study uses the 2010 Core Based Statistical Area (CBSA) delineations which are commensurate with the 2010 U.S. Census. The CBSA rankings are based on the aggregate populations of the nation’s 100 largest CBSAs. Due to the use of more recent data and the re-drawing of CBSA boundaries since the publication of the previous Atlanta Regional Council for Higher Education (ARCHE) MSA studies, information provided in this study is not directly comparable to previous studies conducted.

The Business Higher Education Council works to help commercialize research from local Universities and Colleges and supports existing businesses to grow through research, technology transfer, internships, access to skilled talent and opportunities to access more funding. For more information, please visit MetroAtlantaChamber.com.