A MESSAGE FROM THE PRESIDENT

The information and technological landscape is changing so rapidly that many technologies that were state-of-the-art when our freshmen entered Georgia Tech may well be obsolete by the time they graduate. Our goal is to prepare them to stay ahead of changes and use technology to develop solutions to some of society’s most pressing problems. Our country continues to look to research universities to develop ideas that lead to cures for diseases, strengthen our economy, create new businesses and jobs, and produce leaders. As has been the case in the past, our universities are well-positioned to meet the changing demands and prepare our students for a future that they may not be able to even imagine, but this will require that we revise the way we think, operate, and achieve our mission. Many of these changes will be driven by the need to develop innovative and engaging educational approaches, promote economic development through stronger and more robust industry-based partnerships, and embrace an entrepreneurial ethos across our curricula.

At Georgia Tech, we’re at the forefront of many of these changes, creating life-changing applications through our research, providing policy leadership, preparing leaders and innovators, and exploring new roles and methodologies in education. We are creating “the next” by leading the way in STEM education for learners ranging in age from 6 to 70, knowing that lifelong learning is the way of the future. We are making an economic impact through our research and by creating innovation neighborhoods and providing professional resources for startups, Fortune 500 companies, and everything in between.

Innovation and an entrepreneurial approach to problem solving can impact everything from the way we present material and interact with our students, to how we attract and educate tomorrow’s leaders, particularly in STEM fields. Recent advances in areas such as “flipped classrooms” and technology-assisted learning — including the maturation of the Massive Open Online Course (MOOC) approach and the use of artificial intelligence to assist in the teaching and learning process — are already having a significant impact on the way we educate and communicate with our students, to how we attract and educate tomorrow’s leaders, particularly in STEM fields. Recent advances in areas such as “flipped classrooms” and technology-assisted learning — including the maturation of the Massive Open Online Course (MOOC) approach and the use of artificial intelligence to assist in the teaching and learning process — are already having a significant impact on the way we educate and communicate with our students, to how we attract and educate tomorrow’s leaders, particularly in STEM fields.

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At Georgia Tech, our researchers are doing some amazing things, such as working to “train” our immune systems to fight against incurable cancers and deadly infectious diseases; providing integration and interoperability resources to manage big data; helping robots move in safe and effective ways, with applications in areas ranging from health care to manufacturing; and creating smart cities with advanced autonomous vehicles and enhanced cybersecurity.

While some of what we are doing is in the spotlight, much of what we do goes unnoticed, and almost nothing is an overnight success. Georgia Tech, like many research universities, is a continuum of activity and development. The innovations, support, planning, and collaborations of the past are bearing fruit today. Examples of this abound.

• Starting in 1972, Georgia Tech President Joseph Pettit expanded the focus of Georgia Tech to include advanced research, graduate education, and industrial development. Georgia Tech generated $790 million in research and development expenditures in 2016. According to the latest data from the National Science Foundation, Tech’s R&D funding ranks among the top five public institutions without a medical school.

“...much of what we had hoped to accomplish in 25 years has already been achieved in only eight... the result of the combined efforts of our highly motivated faculty and staff, and our amazing students...”
• In 1990 Georgia Tech expanded its global presence by creating a campus in Metz, France, located in the Lorraine region. Our global footprint has continued to grow strategically, most recently in fall 2016 with the opening and planned construction of our campus in China, a new educational collaboration with the city of Shenzhen and Tianjin University.

• In 1992 the state of Georgia began the HOPE scholarship program. During the past 25 years, approximately 45,000 Georgia Tech students have benefited from the merit-based HOPE and/or Zell Miller scholarships, receiving more than $510 million to help finance their education. Ten years ago, this was complemented internally by the creation of the G. Wayne Clough Georgia Tech Promise Program, which has provided resources for more than 500 students whose family income falls below 150 percent of the federal poverty level, allowing them to graduate debt free.

• In 2003, the first building in Technology Square opened on land purchased by the Georgia Tech Foundation, starting what is today one of the Southeast’s most innovative, vibrant, and energetic live-learn-work-play entrepreneurial hubs.

So, what’s next? The continued growth and momentum we are seeing in Tech Square are being replicated in similar neighborhoods surrounding the campus. We are continuing to partner in the state and region to grow the economy. As we build on excellence in education, we are exploring new methods and delivery systems to meet the growing needs of lifelong learners. We continue to collaborate in research within and across disciplines, and with government, industry, and NGOs. And we are focusing on “Progress and Service,” Georgia Tech’s motto since its inception 132 years ago.

Shortly after I arrived at Georgia Tech in 2009, we brought together the entire campus community to create a 25-year strategic plan, “Designing the Future.” While we knew when we started the process that we could not accurately predict all of the changes, I continue to be impressed with the initiatives we have been able to implement under the leadership of the Strategic Plan Advisory Group, and all the forward thinking that continues in the Georgia Tech community.

We used the planning process to think big, focus on our priorities, and help position the Institute to take advantage of strategic opportunities as they appeared on the horizon. Looking back, our Strategic Plan now seems almost prophetic, and in some areas, much of what we had hoped to accomplish in 25 years has already been achieved in only eight.

These many accomplishments are the result of the combined efforts of our highly motivated faculty and staff, and our amazing students, who by working together have helped bring the plan to life. As a result of their combined efforts, today the Institute is leading the way across a broad spectrum of higher education, changing the way we think about what we do, and helping to design the future!

G.P. “BUD” PETERSON
PRESIDENT, GEORGIA INSTITUTE OF TECHNOLOGY

CREATING THE NEXT

2 ...Through New Learning Methods
4 ...Through Innovation Neighborhoods
6 ...Through Entrepreneurial Confidence
7 ...Through Innovators and Leaders
8 ...Through Research
10 ...Through Global Engagement
11 ...Through Community Engagement
12 ...Through Partnerships
It is imperative that we continue to explore and evaluate innovative approaches to higher education in order to provide alternative educational models that reduce costs, improve the effectiveness of the processes and approaches we employ, and increase the opportunities and accessibility of lifelong learning.

The Commission on Creating the Next in Education comprises more than 50 faculty members, staff, and students. They have been working during the past year to define Georgia Tech's educational environment for generations into the future and to design bold and potentially transformational projects that build on the Institute's legacy of academic excellence, taking into account the economic, social, and scientific changes that will shape the very best universities.
LIFELONG LEARNING

Georgia Tech is committed to providing lifelong learning. It starts with K-12 outreach to instill STEM interest and skills and extends to 25,000 traditional and online students enrolled in degree programs, more than 18,600 learners who benefit from Georgia Tech Professional Education (GTPE) professional development courses and certificate programs, and the 643,000 learners worldwide enrolled in 28 massive open online courses (MOOCs) produced by Georgia Tech.

GRADUATING OUR TROOPS

The Institute’s Veterans Pathway Program helps veterans who have completed active duty within the past five years to pursue nonengineering degrees. Through Georgia Tech’s Scheller College of Business and School of Computer Science, active-duty military members can earn an OMS CS. Scheller College helps veterans transitioning to civilian life to study via Evening and Executive MBA programs. In addition, GTPE’s four-week Veterans Education Training and Transition Program, offered at no cost to active-duty service members and veterans transitioning to civilian careers. It connects professional education with an internship with veteran-friendly employers.

LIBRARY RENEWAL

The five-year Library Renewal project is another way Georgia Tech is creating innovative and engaging educational experiences for students. Twenty-first-century research, teaching, and learning practices require new spaces, services, and resources, and that’s where the Institute is headed, enabling people to explore the past and design the future by bringing together inspirational spaces, curated content, expert guidance, and scholarly communities. The library is intended to encourage learning by choice (outside the classroom), so the priority is to provide an environment that is very student-centric, for both undergraduates and graduate students. The reimagined library will also welcome faculty-centered services and space.

ONLINE MASTER’S

Since Georgia Tech’s Online Master of Science in Computer Science degree was launched three years ago, the program has graduated 277 students, with approximately 300 scheduled for graduation in May 2017. Building on the OMS CS program’s success, the new OMS Analytics degree that launches next fall will continue Georgia Tech’s tradition of providing cost-effective options for nontraditional learners. Along those lines, three professional master’s degrees — Manufacturing Leadership, Applied Systems Engineering, and Sustainable Electrical Energy — are delivered in a hybrid format combining online learning with on-campus visits.

SUMMER ONLINE

Our Summer Online Undergraduate Program allows students to continue advancing toward their degrees while away from campus during summer semester. Our High School Math Program offers advanced mathematics students in Georgia high schools the opportunity to take online courses via live video or internet feed.
Today Tech Square is a vibrant, energetic live-learn-work-play district where new startup ventures, large companies, and higher education collaborate to develop new technologies and promote and enhance economic development. During the past five years, 20 corporate innovation centers and labs have opened in or near Tech Square, with still others in the planning stages. Companies such as Worldpay, Keysight Technologies, and NCR are attracted to Tech Square so that they can access the talent and technologies being developed and collaborate with Georgia Tech faculty, staff, and students. This, when coupled with the many startups fostered in the innovative, dynamic environment developed by the Advanced Technology Development Center (ATDC) and the Enterprise Innovation Institute (EI2), Georgia Tech’s chief economic development and business-outreach arm, has dramatically changed the face and culture of Midtown.

Today, Georgia Tech’s impact extends throughout the state and across the region. In 2016, EI² partners evaluated more than 200 technologies based on Georgia Tech research innovations, created or saved more than 16,000 jobs, generated more than $757 million in investments, and helped more than 1,200 manufacturers reduce operating costs and generate sales. In addition, ATDC companies in 2016 reported revenues totaling more than $274 million and served almost 2,000 Georgia entrepreneurs statewide.

The Biltmore

Late last year, the Georgia Tech Foundation purchased The Biltmore, the historic anchor of Midtown Atlanta. Georgia Tech’s Biltmore will help the Institute expand the vibrant entrepreneurial ecosystem to include additional innovation centers and startup companies. Acquisition of The Biltmore, combined with the state’s generous support of ATDC, positions Georgia Tech to further expand the number of companies it serves statewide.
ACCELERATING BUSINESS

In January 2017, Georgia Tech joined with the CEOs of 10 major Atlanta corporations and the city of Atlanta to announce project Engage, a mentorship-driven accelerator program and venture fund. The fact that 10 corporations committed a total of $15 million to support the accelerator through mentoring, education, and collaboration, and to house the program at Georgia Tech, is a reflection of the business community’s confidence in the Institute and our ability to advance Atlanta’s development as a leading technology hub in the Southeast.

The creation of “Innovation Neighborhoods” provides experiential opportunities for students through internships and cooperative education, hackathons, liaisons with companies as they develop their own startups, and recruitment upon graduation.

CODA GROUNDBREAKING

In December 2016, Portman Holdings held a groundbreaking for Coda — another milestone in the development of Tech Square — which will house Georgia Tech’s high performance computing center. The 750,000-square-foot mixed-use project is slated for completion in 2019. Coda will become a magnet for corporations and startups alike, while serving as a state-of-the-art resource for breakthrough research. As such, it will help propel the region and Midtown Atlanta as one of the nation’s leading innovation ecosystems.
INVENTURE CONTINUES

It is estimated that 65 percent of students entering primary school today will ultimately work in job types that don’t currently exist and will hold 15 different jobs during their career. Georgia Tech is preparing students for the future through curricula and student competitions designed to instill entrepreneurial confidence. The annual InVenture Prize competition in the spring has drawn more than 3,600 participants during its nine years. On March 30-31, Georgia Tech hosted the second Atlantic Coast Conference InVenture Prize, modeled after Tech’s popular competition. All 15 ACC schools participated. Team CauteryGuard, Georgia Tech’s InVenture winner, was among the ACC InVenture’s five finalists and won the $5,000 People’s Choice award, given to the audience’s favorite invention.

Georgia Tech encourages STEM education and an innovation culture in schools all over the state through the K-12 InVenture Challenge, which reaches about 2,000 students annually and is held in conjunction with the Institute’s InVenture Prize undergraduate competition. Eighty teams participated from more than 40 Georgia elementary, middle, and high schools.

Startup Support

More than 1,000 students are participating this year in CREATE-X, a program designed to give students tools to establish startups or to think innovatively within a corporation. Its three signature programs are Startup Lab, Idea to Prototype, and Startup Summer. Since its 2014 launch, CREATE-X has helped 49 student-founded startups. Of those, 32 are still operating in Atlanta and have raised significant follow-up funding.

Georgia Tech students also test their creative ingenuity in other competitions such as the Capstone Design Expo, Ideas to Serve (I2S), and Convergence Innovation Competition (CIC), along with innovation programs such as VentureLab and TI:GER®, and living-learning communities such as Startup House and Grand Challenges. Some provide classroom instruction and credit toward graduation, but all give students the opportunity to work collaboratively to create products and services that can find a market niche.
Georgia Tech continues to be a strong draw for some of the nation’s and world’s most promising students. The academic credentials of the 2,860 freshmen who entered in fall 2016 set new highs. They emerged from a highly competitive field, as applications exceeded 30,500 for the first time. The students represent 69 countries and 43 states, 89 Georgia counties, and 1,429 high schools (307 in Georgia). The class is 41 percent female — an Institute record for the second year in a row — and 60 percent are from Georgia.

In ever-increasing numbers, students are applying, enrolling, and staying at Georgia Tech. A recent Complete College Georgia report indicates that Tech’s freshman-to-sophomore retention rate is at an all-time high of 97 percent. In addition, approximately 3,600 new graduate students started advanced degrees at Tech in fall 2016, a new record.

**HEALTH AND EQUALITY**

Georgia Tech continues its commitment to a safe, healthy, and welcoming environment for all campus community members. In the 2016-2017 academic year, recommendations were implemented from the Black Student Experience Task Force, as well as gender-equity initiatives. Concrete strides have been made in both areas. Georgia Tech’s new Office of Health and Well-being brings together the campus recreation center, health promotion, and health services.

**ATHLETIC EXCELLENCE**

Georgia Tech’s student-athletes continue to excel, both athletically and academically. This year the men’s basketball team made it to the National Invitation Tournament (NIT) final in New York, and the women’s team reached the Women’s NIT final, which was played at Michigan. It is the first time since the Women’s NIT began in 1998 that teams from the same school reached both the men’s and women’s NIT finals. Tech’s football team finished a 9-4 season with a victory over Kentucky in the TaxSlayer Bowl. The women’s tennis team has been ranked in the NCAA’s top 20 all season. Tech’s men’s lacrosse team has been ranked No. 1 for most of the season this spring in the Men’s Collegiate Lacrosse Association (not NCAA-affiliated). The Institute’s athletics’ NCAA Graduation Success Rate (GSR) has reached an all-time high of 87 percent, Tech’s highest since the NCAA began using the metric in 2005, and represents the fourth straight year that Tech’s GSR has increased. Individually, 10 of Georgia Tech’s 13 sports have GSRs higher than the national average for their respective sports, and five programs — men’s cross country/track and field, women’s cross country/track and field, golf, women’s tennis, and volleyball — scored perfect 100 percent GSRs.

Georgia Tech’s women’s basketball team competed in the NIT final just two days after their male counterparts competed in the men’s NIT final, where they were led by head coach Josh Pastner (top photo).

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**Student Life**

Once on campus, students participate in Tech’s 400-plus student organizations, which offer significant learning and leadership opportunities in activities ranging from a cappella singing to space exploration. With almost 7,000 members, the largest is the Georgia Tech Student Alumni Association. The organization connects students and alumni and provides an opportunity to give back through its annual Gift to Tech program benefiting a program or project selected by a student vote. The 2016-2017 SAA gift to Tech went to Tech Ends Suicide Together, a program developed by the Counseling Center and the Division of Student Life.
The Institute’s research efforts are diversified, ranging from biomedical advances to space exploration, which positions the Institute well when funding decisions are made at the national level. Georgia Tech’s three research objectives are to create transformative opportunities, develop collaborative partnerships, and maximize economic and societal impact by acceleration to market. Of the Institute’s $786 million in research expenditures during the past year, for the first time more than $100 million was industry funded.

**DATA FOR HEALTH**

In health analytics, a vital field as the U.S. seeks to improve health care for its citizens, Georgia Tech uses a variety of data analysis techniques to convert information to knowledge that supports diagnosis and decision-making. Health analytics research is driving improvement in treatment, evaluation of wellness programs, and monitoring of intensive-care patients.
Cell-based Innovation

Georgia Tech is a pioneer in cell-based manufacturing, bringing together manufacturing, biomedical engineering, materials science, and biology as a transformative opportunity. These efforts are designed to scale up the production of therapeutic cells, with the potential to dramatically improve health care globally.

Robots and Cybersecurity

In the field of robotics, Georgia Tech researchers are exploring the strategic research areas of autonomy, human augmentation, and collaborative robotics. The Institute has 11 labs and centers dedicated to cybersecurity, with nearly 500 scientists, faculty, and students involved with cybersecurity research. In 2016, Georgia Tech received $83 million in cybersecurity research awards.

SOLVING PROBLEMS

Georgia Tech is the second-biggest recipient of Department of Defense research funds (after Johns Hopkins). Our cutting-edge research addresses problems such as traumatic brain injury, regenerative medicine/tissue engineering for wounded service members/veterans, prosthetics and orthotics, and numerous innovations for virtually all parts of the military.

In the past fiscal year, the Georgia Tech Research Institute (GTRI) recorded revenues of $370 million from contracts, grants, and other sources. More than 2,000 scientists, engineers, support professionals, and students help GTRI solve difficult problems facing government and industry in three major areas: (1) electronics, optics, and systems; (2) information and cyber spaces; and (3) sensors and intelligent systems. Their work is done primarily in eight research laboratories on Georgia Tech’s main campus and at the Cobb County Research Facility north of Atlanta.

KRISHNENDU ROY

Robert A. Milton Chair and professor in the Wallace H. Coulter Department of Biomedical Engineering, is leading the cell manufacturing initiative. A grant from the Marcus Foundation has helped launch the Marcus Center for Therapeutic Cell Characterization and Manufacturing (MC3M).

Dan Goldman, associate professor in the Georgia Tech School of Physics, is shown with the “MuddyBot” robot in a trackway used to study how the robot — which was modeled on the mudskipper — moves across granular surfaces.

GTRI Research Scientist Tara Madden developed the user interface for a tool that tests the logic of fully autonomous systems.
A new educational collaboration among Georgia Tech, the city of Shenzhen, and Tianjin University in China will expand global opportunities in science, technology, and engineering education. Georgia Tech President G.P. “Bud” Peterson signed the agreement Dec. 2 in a ceremony in Shenzhen to establish the Georgia Tech Tianjin University Shenzhen Institute, which will offer majors in electrical and computer engineering, computer science, industrial design, environmental engineering, and analytics. The Shenzhen government provided land, startup funding, and operational subsidies. The Shenzhen campus is designed to be self-sustaining, similar to Georgia Tech-Lorraine, which celebrated its 25th anniversary in Metz, France, last May.

World University Rankings by Times Higher Education show that Georgia Tech has moved from No. 41 to No. 33, the highest ranking among Georgia’s academic institutions. The Institute was 20th among U.S. institutions and fifth among public universities.

President G.P. “Bud” Peterson signed an agreement establishing the Georgia Tech Tianjin University Shenzhen Institute.
Creating the Next... Through Community Engagement

Georgia Tech cultivates science and technology education through its CEISMC program (Center for Education Integrating Science, Mathematics, and Computing) for more than 11,000 K-12 students and their teachers each year. From K-12 through graduate education, Georgia Tech is striving to provide a firm foundation to meet our national and global challenges while providing lifelong learning opportunities in an environment that fosters entrepreneurial confidence and innovation.

Through the Atlanta Public Schools (APS) Scholars program, Georgia Tech offers automatic acceptance and four-year in-state tuition scholarships to all APS valedictorians and salutatorians. The Institute partners with schools and the Atlanta community in numerous initiatives.

Social Courage

In February Georgia Tech presented Jimmy and Rosalynn Carter with the 2017 Ivan Allen Jr. Prize for Social Courage. Named in honor of former Atlanta Mayor Ivan Allen Jr., a Georgia Tech alumnus, the prize underscores the Institute’s mission to improve the human condition by recognizing those around the world who have made a positive difference by standing up for moral principle at the risk of their careers and livelihoods. President Carter, a Georgia Tech alumnus, and Rosalynn Carter, his wife of 70 years, have worked tirelessly to improve global health and human rights, as well as to promote democracy in more than 65 countries throughout the world.

President Jimmy Carter and Rosalynn Carter were honored with the 2017 Ivan Allen Jr. Prize for Social Courage.

The Business of STEM

Access to STEM education combined with a solid foundation of liberal arts is vital as the United States grapples with 21st-century challenges. Georgia Tech’s efforts directly address national priorities and needs: STEM education and workforce training, as well as higher education’s rising costs. In Tech’s Scheller College of Business, students learn to adapt emerging technologies to business operations.
Many of the Institute’s successes reported here have been made possible through partnerships among government, business, community organizations, and the generous ongoing support from Georgia Tech alumni and friends. That is the power of partnerships.

EMORY

Georgia Tech’s strong public-private partnership with Emory University allows the two institutions to focus on core strengths and collaborate with each other in complementary areas to maximize resources and expertise. Tech and Emory share more than a dozen joint centers and initiatives, including the Library Service Center and the Wallace H. Coulter Department of Biomedical Engineering, which is ranked No. 1 in the nation by U.S. News and World Report.

Children’s Healthcare

Children’s Healthcare of Atlanta and Georgia Tech have been longtime partners in the quest to improve medical care for children. In September, the two announced a $5 million grant from The Imlay Foundation to Children’s Healthcare for the development of pediatric therapies.

Wilbur Lam, left, assistant professor in the Wallace H. Coulter Department of Biomedical Engineering, has served as a mentor to Ph.D. student Rob Mannino for several years. Mannino is working to perfect a smartphone-based solution for monitoring hemoglobin levels in people with beta thalassemia.
Georgia Tech is vigorously taking on the daunting challenge of keeping students on the cutting edge at a time when knowledge is growing exponentially and information is disseminated almost instantaneously. “Designing the Future” and “Creating the Next” are more than just marketing slogans; they are missions the Institute has pursued since its beginning more than 130 years ago. With the support of all Yellow Jackets and the thousands of others who recognize the value of a Georgia Tech education, the Institute will continue to uphold its longstanding legacy of excellence.

**A SMARTER CITY**

Georgia Tech is well-positioned via our research and partnerships to be a valuable player as Atlanta incorporates “smart-city” concepts into the everyday lives of our citizens. The Institute already has partnerships with the city of Atlanta and IT infrastructure providers AT&T and Horizon. The Smart Cities concept has implications in several areas that are right in Georgia Tech’s wheelhouse, including cybersecurity, energy efficiency, environmental sustainability, systems thinking, and urban planning.

**Partners in Growth**

The most recent five-year study conducted by the Board of Regents of the University System of Georgia revealed that Georgia Tech’s $2.87 billion annual economic impact leads the USG’s 28 academic institutions. But that number just scratches the surface of all the ways in which the Institute contributes to the economic well-being of Atlanta and Georgia. The Institute is also a driving force behind such enterprises as innovation neighborhoods that attract business and industry; research collaborations with other institutions, industry, and government; the building and strengthening of Georgia’s STEM workforce; and commercializing new ideas and inventions.

“Technological change is fundamental to the advancement of the human condition. The Georgia Tech community — students, staff, faculty, and alumni — will realize our motto of ‘Progress and Service’ through effectiveness and innovation in teaching and learning, our research advances, and entrepreneurship in all sectors of society. We will be leaders in improving the human condition in Georgia, the United States, and around the globe.”

**GEORGIA TECH’S MISSION**

Introduced with 25-year Strategic Plan
Fall 2010