It has been a great year for the Georgia Institute of Technology! This past year, we have started using the term “Creating the Next” as shorthand for our drive to solve some of the world’s most challenging technological problems, and while Georgia Tech is known globally for excellence in engineering, people don’t typically associate space science with the Institute. That said, this past September Georgia Tech was in the news, globally, when two of our researchers played a key role in the discovery of the strongest evidence to date of liquid water on Mars. Georgia Tech Ph.D. students Lujendra Ojha, who led the study, and Mary Beth Wilhelm, a NASA researcher and study co-author, participated in NASA’s live TV and web broadcast, resulting in more than 3,000 media stories worldwide.

Also this past fall, a global research group, including a number of researchers from Georgia Tech, became the first to observe ripples — called gravitational waves — in the fabric of space-time. Laser Interferometer Gravitational-wave Observatories (LIGO) were conceived, built, and operated by Caltech and MIT. Advanced LIGO involves researchers from Georgia Tech, along with scientists from universities around the U.S. and in 14 other countries. The LIGO Scientific Collaboration included two Georgia Tech College of Sciences faculty members, Associate Professor Laura Cadonati, chair of the LIGO Data Analysis Council, and Associate Professor Deirdre Shoemaker, director of Georgia Tech’s Center for Relativistic Astrophysics, along with their team of 10 postdoctoral fellows, graduate and undergraduate students.

The results of the LIGO project confirmed Albert Einstein’s 100-year-old prediction of the existence of gravitational waves based on his theory of general relativity. This past October, we dedicated the Albert Einstein Monument on Tech Green. In February, the day after the announcement of the confirmation of gravitational waves, someone (George P. Burdell?) placed a handwritten sign on the statue that simply said, “TOLD YOU SO.” The photo received more than 2 million views on the Internet. Funded by the National Science Foundation (NSF) for more than a decade, Advanced LIGO is a great example of the importance of investing long-term in science, as well as collaboration and innovation at work.

Other areas of study — including architecture, business, computing, engineering, and liberal arts — are getting increased visibility, as is our prominence in the fields of biomedicine, biotechnology, and bioengineering. A visual representation of this is our new Engineered Biosystems Building (EBB), a 219,000-square-foot facility dedicated in September and designed for multidisciplinary research.

Georgia Tech’s leadership, investment in science, and global collaboration help make such actual and potential advances possible.

Georgia Tech continues to play a leadership role in the innovation ecosystem. Tech Square has become a nationally recognized innovation hub, with the addition of numerous corporate innovation centers. In March, the Harvard Business Review ran a story on “Why Today’s Corporate Research Centers Need to Be in Cities” that cited Midtown Atlanta as an example of the growing trend of companies relocating major research facilities near urban universities. Georgia Tech will be the anchor client

**ART AND SCIENCE**
A 3,000-pound sculpture of Albert Einstein was officially unveiled on Georgia Tech’s campus in October 2015. “Georgia Tech and Atlanta embody science and civil and human rights like no other institution and city in the world,” said Provost Rafael L. Bras. “It is fitting that we will be the home of this unique piece of public art.”
of the new High Performance Computing Center, which will support leading-edge research programs in computing and advance big data analytics. And just as Tech Square became an innovation powerhouse, so will the rapidly developing 11-acre Technology Enterprise Park in Midtown as corporations and startups take advantage of the tremendous opportunities to interact and work with our talented students, faculty, and staff.

Excellence requires resources. When Campaign Georgia Tech ended Dec. 31, 2015, we had completed the most successful fundraising effort in the Institute’s history. Led by the boundless energy and commitment of Co-chairs John and Mary Brock, we exceeded our $1.5 billion goal by more than $300 million. Along with generous foundation and corporate support, a total of 91,610 Georgia Tech alumni, students, faculty, staff, and friends contributed. Every major goal was exceeded, and while our goal was very ambitious — as John and Mary have said — it was never really about the money. It was, and still is, about the people and the marvelous things they have and will continue to accomplish.

While Campaign Georgia Tech is now officially over, its impact lives on. This past year, we welcomed the best-qualified and most diverse class in Georgia Tech history for the seventh year in a row; opened the EBB; discovered water on Mars; dedicated the Einstein Monument and helped confirm his prediction of gravitational waves; celebrated Tech’s 250th Commencement; and saw our students, faculty, and staff do some absolutely amazing things in the classrooms, laboratories, and our communities.

I want to thank each of you and the entire Georgia Tech community for the tremendous support we have received and for all you continue to do to make this one of the best technological research universities in the world!

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

A MESSAGE FROM THE PRESIDENT (CONT.)

JOINT LIBRARY SERVICE CENTER
Emory University and the Georgia Institute of Technology dedicated a new joint Library Service Center (LSC), a collaborative project that houses a shared collection of materials in a 55,000-square-foot secure, climate-controlled facility. A reading room allows users to consult materials on site, and physical items will be delivered to campus locations twice a day.
Five years ago, Georgia Tech launched its 25-year Strategic Plan called “Designing the Future.” With 20 percent of the timeline now history, it is encouraging to look back and see how much has been accomplished in pursuit of the plan’s five primary goals. Georgia Tech is exploring new ways to educate students, partner with government and industry, serve employees, and connect with local and global communities. Georgia Tech’s 40-member Commission on Creating the Next in Education was appointed in fall 2015 by Provost Rafael Bras. The commission is exploring new ideas in content delivery and seeking to nurture a culture of lifelong learning for undergraduate, graduate, and professional education learners. The provost also established a Task Force on the Learning Environment composed of faculty, staff, and students to explore and identify actions to improve Tech’s academic culture.

Tech’s Quality Enhancement Plan, required every 10 years to remain an accredited university, was introduced in March 2015 and officially went into effect in 2016. Titled Serve-Learn-Sustain, it is built around the theme of “creating sustainable communities.” The QEP is a direct response to the Strategic Plan and will help guide efforts to weave the sustainability ethic into curriculum and campus facilities.

Georgia Tech’s Strategic Plan includes enriching the student experience, developing an innovative environment, and sustaining excellence in research and scholarship. The library renewal project has a guiding vision to reimagine the 21st-century library. The Georgia Tech Library and Emory University Libraries partnered to create a climate-controlled Library Service Center, which opened in spring 2016 on Emory’s Briarcliff property. It will house 95 percent of Georgia Tech’s physical collection, freeing up valuable space in the Price Gilbert Library and Crosland Tower for student and faculty use. The planned renovation will permit the creation of new services and spaces for students and faculty, along with the piloting of new services and spaces as needs change, and reduce energy usage by 60 percent. It will also include an innovation and ideation studio for students to develop and design project plans.
GLOBAL IMPACT

Georgia Tech enjoys a stellar reputation internationally, ranking No. 9 on the U.S. News & World Report list of the 100 Best Global Universities for Engineering and No. 70 on its 500 Top Global Universities list. Students come to Tech from 127 countries. Georgia Tech students are studying and interning in 70 countries, with 52 percent of graduates participating in an international work or study experience before they leave. Georgia Tech faculty are engaged in research collaborations in more than 100 countries. The Institute has global centers in China, Costa Rica, France, Mexico, Panama, and Singapore.

Georgia Tech Professional Education offers courses at 77 sites in 53 cities around the world. Last year, 279 companies and industry partners were served through contract courses totaling more than 25,000 enrollments. Georgia Tech’s 29 MOOC course offerings have a total enrollment of more than 1 million. Less than two years after it launched, Georgia Tech’s first-of-its-kind online master’s program in computer science (OMS CS) produced its first graduates. The program has 3,200 students.

FOCUS ON LATIN AMERICA

Juan Carlos Varela, president of Panama and a 1985 Georgia Tech graduate, visited campus in January 2016. He met with Provost and Executive Vice President for Academic Affairs Rafael L. Bras, as well as with students and teachers who are participating in a Panamanian bilingual training program.
Faculty, staff, and alumni share their expertise on panels and boards, testify before Congress, serve as media experts, and work in off-campus leadership positions. Georgia Tech influences the national agenda in the areas of computing, cybersecurity, energy, electronics and nanotechnology, logistics, manufacturing, materials, policy, and robotics, to name a few.

Several examples from recent months:

- Former U.S. Senator Sam Nunn, now a Distinguished Professor at Georgia Tech’s Sam Nunn School of International Affairs, recently addressed the Carnegie Moscow Center in Russia on ways the U.S. and Russia can work together to increase global security.
- Former Vice Chairman of the Joint Chiefs of Staff and Distinguished Professor at the Sam Nunn School of International Affairs Admiral James “Sandy” Winnefeld testified before the House Armed Services Committee in Washington, D.C. on reforming the Department of Defense’s acquisition procedures.
- Peter Swire, Nancy J. and Lawrence P. Huang Professor of Law and Ethics in the Scheller College of Business, testified before the Senate Judiciary Committee on the topic of encryption.
- Aris Georgakakos, School of Civil and Environmental Engineering professor and Georgia Water Resources Institute director, met with the Georgia congressional delegation in Washington, D.C., to discuss water resource issues.
- Tiffany Wilson, Global Center for Medical Innovation (GCMI) executive director, serves on the Secretary of Commerce’s National Advisory Committee on Innovation and Entrepreneurship. Government and business leaders frequently visit the campus to collaborate and gain insight in a number of areas. Several recent examples:
  - Jacob Lew, U.S. Treasury secretary, and María Contreras-Sweet, U.S. Small Business Administration (SBA) administrator, made separate trips to Georgia Tech to tour the Advanced Technology Development Center (ATDC).
  - U.S. Secretary of Commerce Penny Pritzker and John Holdren, White House Office of Science and Technology Policy director, are spring 2016 commencement speakers, along with Mary Brock, Campaign Georgia Tech co-chair and co-owner of the Atlanta Dream.
  - Michelle Lee, director and undersecretary of Commerce for Intellectual Property (IP) at the U.S. Patent and Trademark Office, met with young entrepreneurs from Georgia Tech, toured corporate innovation centers in Tech Square and Tech’s Invention Studio, and participated in a town hall meeting on Tech’s campus with the Atlanta IP community.
  - Thomas Russell, director of the Army Research Laboratory (ARL), visited with Georgia Tech leadership and faculty in an effort to boost interest in the lab’s Open Campus initiative. The Georgia Tech Research Institute, Georgia Tech’s applied engineering and research unit, conducts the vast majority of its work for Department of Defense customers.

In February, Georgia Tech awarded the 2016 Ivan Allen Jr. Prize for Social Courage to Nancy Parrish, who helped launch a national movement to reform how the U.S. military prosecutes sexual violence. Named in honor of late Atlanta Mayor Ivan Allen Jr., a Tech alumnus, the prize recognizes individuals who, by standing up for clear moral principles in the social arena, have positively affected public discourse at the risk of their own careers and livelihoods.

Georgia Tech has created and enhanced distinct innovation neighborhoods, and continues to attract large company innovation centers to Tech Square. In January, Delta Air Lines became the newest company to open an innovation center in Tech Square, joining The Home Depot, Coca-Cola Enterprises, Panasonic, Southern Company, and AT&T, among others. Georgia Tech continues to move forward in Tech Square with the High Performance Computing Center (HPCC), which will support leading-edge research programs in computing and advanced big data analytics. The 750,000-square-foot building, located near the Scheller College of Business and the Georgia Tech Hotel in Midtown, is being developed by Portman Holdings. Georgia Tech will be an anchor tenant, occupying one-half of the new development. Scheduled to open in 2018, the HPCC will become a mixed-use community of innovation, education, and intelligent exchange.

The Enterprise Innovation Institute’s (EI3) various economic development programs had a total impact of $2.46 billion on Georgia’s economy in 2015, saving more than 23,000 jobs. The Advanced Technology Development Center (ATDC) worked with more than 450 companies that reported more than $826 million in capital activity, generated revenue of $1.6 billion, and created almost 2,000 jobs. The Georgia Manufacturing Extension Partnership alone worked with 1,929 Georgia manufacturers to create or retain 2,149 jobs, save more than $25.3 million, and generate sales of more than $205 million. The Georgia Procurement Assistance Center helped 2,198 Georgia companies secure more than $854 million in government contracts and create or save an estimated 17,000 jobs.
BRIGHT IDEA Using nanometer-scale components, researchers demonstrated the first optical rectenna, a device that combines the functions of an antenna and a rectifier diode to convert light directly into DC current. “We could ultimately make solar cells that are twice as efficient at a cost that is 10 times lower, and that is to me an opportunity to change the world in a very big way,” said Baratunde Cola (right), an associate professor in the George W. Woodruff School of Mechanical Engineering.

Associate Professor Deirdre Shoemaker, Ph.D. candidate Karan Jani, and Postdoctoral Research Fellow James Clark discuss the astrophysical implications of the LIGO discovery.
In partnership with industry and government, Georgia Tech focuses on creating transformative opportunities, strengthening collaboration, and maximizing economic and societal impact via high-level research.

Technological research universities such as Georgia Tech are positioned to be significant players in a national push to make clean-energy production and distribution an integral part of our industrial efforts. The Georgia Tech Strategic Energy Institute, an epicenter for clean-energy research and development, has had master agreements in recent years with such notable industry partners as Siemens, General Electric, and Exxon Mobil.

With the help of a $15.7 million grant from the Atlanta-based Marcus Foundation, the Institute has launched a new Georgia Tech research center that will develop processes and techniques for ensuring the consistent, low-cost, large-scale manufacture of high-quality living cells used in cell-based therapies. VentureLab, a Georgia Tech incubator at Tech Square, has helped faculty, staff, and students develop more than 300 startups and form companies based upon their research. In 2015, it was named the No. 10 university business incubator in North America.

In space, Georgia Tech is "thinking small." Launch of Tech’s first entry into the era of small spacecraft, the 60-kilogram Prox-1, is scheduled for September 2016 aboard a Space-X Falcon Heavy rocket, which will also carry two main spacecraft and about a dozen small satellites. Using the same miniaturization and capability enhancements that put smartphones into nearly everyone’s pockets, Tech researchers are exploring whether several spacecraft as small as a trash can might accomplish the same tasks as a traditional multi-ton vehicle at a fraction of the cost.
Georgia Tech emphasizes collaboration internally through interdisciplinary cooperation and externally via work with business, government, and communities. The Georgia Tech Research Institute is the largest research entity at Georgia Tech and the largest employer of Tech students, hiring more than 250 each year. More than 40 GTRI researchers hold joint appointments with Georgia Tech’s academic colleges. GTRI scientists and researchers teach more than half of the courses offered by Georgia Tech Professional Education.

Through GTRI, the Institute has several joint agricultural technology projects with the University of Georgia. Georgia Tech’s Enterprise Innovation Institute collaborates with UGA’s College of Public Health to help Georgia employers design better health care for their employees.

With the backing in 2015 of inaugural founding members AirWatch, AT&T, and Samsung Electronics, Georgia Tech established the Center for the Development and Application of Internet-of-Things Technologies. “Internet of Things” refers to the ability for all types of devices to communicate with each other through networks such as the Internet, radio frequencies, and other transmission forms. Devices could include the equipment in cars, homes, trucks, cargo, health care, and other everyday objects.

A Georgia Tech project team, supported by the U.S. Department of Energy’s Advanced Research Projects Agency-Energy, is working on how utilities and consumers can coordinate the energy flow, exchange of services, and decision-making needed to maintain a reliable, profitable, and sustainable grid.

Georgia Tech’s Center for Education Integrating Science, Mathematics, and Computing (CEISMC) reaches on average 25,000 K-12 students throughout Georgia each year, designing curriculum; providing professional development for teachers; offering science, technology, engineering, and mathematics (STEM) enrichment programs; hosting student academic competitions, including teachers and high school students as researchers in Georgia Tech labs; and offering advanced STEM courses for high school students.

Georgia Tech partners citywide to support and sponsor popular events such as Africa Atlanta, France-Atlanta, and the Atlanta Science Festival. It also has longstanding partnerships in numerous areas with such prominent institutions as Emory University and Children’s Healthcare of Atlanta.
Through curriculum and student competitions, Georgia Tech is working to instill an entrepreneurial spirit in its students. The annual InVenture Prize competition in the spring has drawn close to 3,000 participants during its eight years. April 5 – 6, Georgia Tech hosted the inaugural Atlantic Coast Conference InVenture Prize, modeled after Tech's popular competition. All 15 ACC schools participated.

CREATE-X is designed to give students tools to establish startups. Its three signature programs are Startup Lab, Idea to Prototype, and Startup Summer. Georgia Tech students also test their creative ingenuity in other competitions such as the Capstone Design Expo, Ideas to Serve, and Convergence.

Opportunities for experiential, project-based learning and professional leadership are also available in numerous courses across Georgia Tech’s six colleges. Business and industry partners play strong supporting roles to help students learn the value of real-world innovation.

Innovation Competition, 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.

Wobble (left), an automated balance test to assess athletes following concussions, finished second in the 2016 InVenture Prize competition at Georgia Tech. The inventors are: Garrett Wallace, biomedical engineering; Matthew Devlin, biomedical engineering; Ana Gomez del Campo, biomedical engineering; and Hailey Brown, mechanical engineering. TruePani (center) walked away with $5,000 as winners of the People’s Choice Award. The inventors are: Naomi Ergun, business administration; Shannon Evanchech, environmental engineering; Samantha Becker, civil engineering; and Sarah Lynn Bowen, business administration. FireHUD (right), a device to help keep firefighters safe, won the 2016 InVenture Prize at Georgia Tech. The inventors — Tyler Sisk, an electrical engineering major, and Zachary Braun, a computer engineering major — won $20,000 plus a free patent filing and a spot in Flashpoint. They’re shown with David Phillips (second from right), a firefighter who demonstrated the device during the final. In the inaugural ACC InVenture Prize competition held several weeks later at Tech, FireHUD took home the People’s Choice Award.
In March, the McAuley Aquatic Center hosted the 2016 NCAA Swimming & Diving Championships for men and women. The facility was recently named the No. 1 best collegiate competition swimming pool in the nation by www.collegeranker.com.

Georgiа Tech continues to be a coveted destination for some of the world’s best students. For the freshman class that will start in fall 2016, the Institute had a record of more than 30,500 applications, up 12 percent over last year. For the eighth straight year, the new freshman class will be the best qualified in the Institute’s history. Most will come from Georgia, but they will represent all 50 states and 92 countries.

Students participate in Tech’s 400-plus student organizations, which offer significant learning and leadership opportunities. Tech’s Office of Leadership & Civic Engagement facilitates student-leadership development through engagement with campus, regional, and world communities.

A concerted Institute-wide approach to creating a safer and healthier campus has resulted in the creation of the Office for Community Health and Wellbeing, bringing together the Campus Recreation Center, Health Promotion, and Stamps Health Services. Faculty, staff, and students are using feedback from undergraduate and graduate student surveys to develop recommendations for improvements to the campus environment.

Georgia Tech’s student-athletes continue to excel, both athletically and academically. According to the latest data released by the NCAA, Georgia Tech student-athletes recorded a school-record Graduation Success Rate (GSR) of 84 percent. Ninety-six Tech student-athletes received degrees in 2015, and 45 percent earned Dean’s List or Faculty Honors designation in fall 2015. Of Tech’s 400 student-athletes, 50 percent earned a 3.0 GPA or higher during fall 2015.

Temi Olubanjo, a Ph.D. student in the School of Electrical and Computer Engineering, is working on a wireless and wearable technology that can help patients to comply with taking their medications.
During the 2015 Charitable Campaign, Georgia Tech once again showed its community-minded nature with generous contributions to nonprofits that help people all over Georgia. This year, 1,135 individuals contributed or pledged a total of $351,604, Georgia Tech’s second-highest total fundraising amount for the annual campaign. Tech employees gave to 390 charitable organizations.

Now in its second year of operation, Georgia Tech’s Staff Council gives the Institute’s 3,700-plus staff members a formal means of communicating with executive leadership. The council kicked off its new quarterly Inform Georgia Tech Series, hosted town halls, and addressed priority topics through standing committees.

Four professors in the College of Sciences, one in the Scheller College of Business, and one in the Ivan Allen College of Liberal Arts have been named fellows of the American Association for the Advancement of Science for 2015. Faculty elected from the College of Sciences were Yury Chernoff, Christoph J. Fahrni, Jean Lynch-Stieglitz, and Professor Emeritus Paul H. Wine; from the Scheller College, Marie Thursby; and from the Ivan Allen College, Philip Shapira.
INVESTING IN THE FUTURE

Georgia Tech’s excellence is built upon its exceptional student body, faculty, and staff. In addition, the Institute’s alumni and friends provide support that continues to raise our stature nationally and internationally.

Campaign Georgia Tech, which ended Dec. 31, 2015, is a sterling example of the broad-based “team” the Institute has pulling for it. Under the leadership of Campaign Co-chairs John and Mary Brock, more than 91,000 Georgia Tech alumni, students, faculty, staff, and friends joined with foundation and corporate supporters to exceed the campaign’s goal of $1.5 billion by more than $300 million. Its fruits can already be seen in facility improvements, faculty support, and scholarship funding. Georgia Tech offers G. Wayne Clough Georgia Tech Promise scholarships that will eventually impact thousands. The Campaign provided $354 million for undergraduate and graduate student support. In the past decade, eight colleges, schools, and research institutes were named. The Campaign resulted in 104 new endowed chairs and professorships. More than 20 facilities were constructed or renovated.

Keeping students at the cutting edge is daunting at a time when knowledge is growing exponentially and information is disseminated almost instantaneously. Georgia Tech is vigorously taking on that challenge. “Designing the Future” and “Creating the Next” are more than just contemporary slogans; they are missions the Institute has pursued since its beginning more than 130 years ago. With the support of future Yellow Jackets and the thousands who have long recognized the value of a Georgia Tech education, the Institute will continue to uphold its longstanding legacy of excellence.

The Engineered Biosystems Building opened in 2015.

In 2007, the family of the late William E. “Bill” Moore (IM 1938) made a seven-figure commitment to establish the Moore Family Scholarship Fund for Women’s Tennis. The family was inspired in part by the team’s 2007 NCAA national title.

A $50 million gift from Roberta and Ernest “Ernie” Scheller Jr. (IM 1952, Honorary Ph.D. 2013) created the Scheller College of Business in 2012.

Four dean’s chairs and three school chairs were established, including the Southern Company Dean’s Chair in the College of Engineering held by Gary May.


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$1.8 billion raised in total

104 endowed chairs and professorships

$276 million for intercollegiate athletics

140 Tech Promise scholarships, for qualified students whose family income is less than $33,300 per year

$354 million for undergraduate and graduate student support

$792 million given by Georgia Tech alumni

20+ facilities and features constructed or renovated

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