



PRESIDENT'S UPDATE

SPRING 2012

DR. G. P. "BUD" PETERSON
PRESIDENT
GEORGIA INSTITUTE OF TECHNOLOGY



Georgia Institute
of Technology®

GEORGIA TECH'S IMPACT



This spring twenty-three G. Wayne Clough Tech Promise scholars walked across the stage at commencement to receive

their Georgia Tech diplomas, made possible because of a goal to make a Georgia Tech education within reach of every qualified Georgia resident, regardless of family income. Their Georgia Tech education will have a real and lasting impact not only on their lives, but also for generations to come. There is a parallel here to Georgia Tech as an Institute. The impact is broad, far-reaching, and lasting. While this annual spring update provides highlights, there are many other significant accomplishments through teaching, research, entrepreneurship, and collaborations by the Georgia Tech community that together are helping to define the technological research university of the 21st century.



Approximately 45 percent of Georgia Tech students graduate with an international experience (study, work, and/or research abroad).

Global Impact

Georgia Tech continues to expand its global presence and impact, and to provide continued international opportunities for students.

Georgia Tech has established strong collaborations with the World Economic Forum, including being among the top U.S. public and private institutions to be invited to be a part of their Knowledge Advisory Board.

This year Georgia Tech established a partnership on campus with the Korean Institute for the Advancement of Technology (KIAT). The new KIAT Research and Business Development Hub has three focus areas: research, education, and economic development. They are funding more than \$10 million in research projects with Tech faculty and small- and medium-size Korean companies.

In April we announced a joint research center in geo-signal processing with the King Fahd University of Petroleum and Minerals (KFUPM), the leading engineering university in Saudi Arabia.

Students are increasingly taking advantage of international opportunities. Last year we had almost 1,400 International Program participants. The number of students studying or working abroad increased 11 percent this year and we are working to increase that number by offering more than 20 new programs. These range from an Arabic program in Jordan open to all majors, to an option for most majors to study in the spring at Universidad de Granada, to summer internships in Taiwan for Management majors.



National Impact

Faculty and staff continue to represent Georgia Tech in the national arena in dozens of ways, ranging from testifying before Congress to presenting research, serving as media resources, and working with government, industry, and other universities to develop and help implement solutions for some of our country's biggest challenges.

In January, Georgia Tech was named by the U.S. Department of Transportation as one of ten national University Transportation Centers (UTCs) by the U.S. Department of Transportation. Bringing together a consortium of universities in Georgia, Florida, and Alabama, the UTC provides national recognition of Georgia Tech's capabilities and expertise in contributing to transportation solutions for the nation, state, and metropolitan area.

Because of our commitment to attract more K-12 students to Science, Technology, Engineering, and Math, or STEM fields, individuals and organizations are increasingly seeking our counsel. In February, College of Engineering Dean Gary May spoke at a White House ceremony on the subject. The event was hosted by the White House Council on Jobs and Competitiveness. Dean May shared strategies used by Georgia Tech to retain 95 percent of freshmen after their first year and graduate eight out of every ten students within six years. In March, Tech was the host site for the launch by Intel of the national "Stay with It" campaign to encourage students to complete their college degree in STEM fields.

From the nationally recognized work on computer science curriculum done by Mark Guzdial and Barb Ericson to the leadership of the Center for Education

Integrating Science, Mathematics, and Computing, or CEISMC, in partnering with the state on its Race to the Top award to our online offerings of calculus for high school students, Georgia Tech is taking a national leadership role in helping to solve the U.S. STEM crisis.

In addition, Georgia Tech was selected to participate in a Department of Energy project for big data, helping to develop new tools for scientists working with supercomputers.

To showcase Georgia Tech's expertise we launched Amplifier, a multi-contributor news blog pairing current issues with commentary from Georgia Tech experts and providing a forum to spotlight, "What does Georgia Tech think?" A companion Twitter feed strategically targeting journalists has also been created to highlight new posts and other Georgia Tech news.

State of Georgia Impact

Georgia Tech has had a significant impact on approximately 70,000 jobs in Georgia through a combination of jobs for Georgia Tech employees and indirect spending, alumni and faculty-founded companies, technology start-ups incubated at Tech, firms based on Tech intellectual property, companies whose locations were influenced by Tech, and statewide economic development programs.

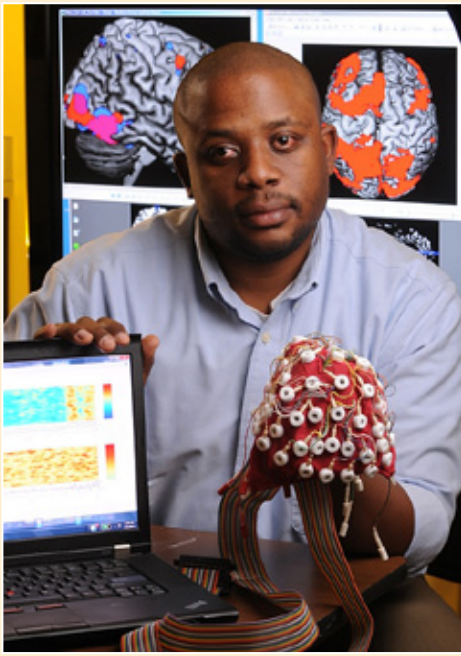
Through research and partnership with business and industry, Georgia Tech is an economic engine for Georgia and the Southeast with an economic impact of well over \$2 billion. Early analysis of new research indicates it is even higher. Georgia Tech's investment in economic development activities leverages the State of Georgia's funding investment at a ratio of 26 to 1, including both state appropriations for economic development support and state-funded, competitively selected awards.



Above: The Global Center for Medical Innovation (GCMI) is a partnership formed by four of Georgia's leading research and healthcare organizations: the Georgia Institute of Technology, Saint Joseph's Translational Research Institute (SJTRI), Piedmont Healthcare, and the Georgia Research Alliance. The Center will bring together the core members of the medical device community, including universities, research centers and clinicians, established drug and device companies, investors, and early-stage companies.



For nearly two decades, Professor Mark Guzdial (left) in the School of Interactive Computing has been a leader in the field of computing education. His research team is made up of faculty and graduate and undergraduate students who work on the design and implementation of innovative technology to help improve learning.



School of Applied Physiology Assistant Professor Lewis Wheaton uses brain imaging techniques to better understand cognitive motor control.

Research Prominence

In 2011, Georgia Tech's research expenditures were \$655 million, a reflection of both the caliber of our faculty and staff and the scope of our research enterprise. That's an increase of 49 percent from \$441 million in 2006, just five years before. The Institute has three strategic objectives for its research: to create transformative opportunities; to strengthen collaborative partnerships; and to enhance economic development as a benefit to Georgia and society in general. Georgia Tech is creating an infrastructure to accelerate the commercialization process and is working to make it easier for our researchers to better collaborate with business and industry.

Through interdisciplinary research, Georgia Tech faculty and staff are able to address challenges from a broader perspective to find answers to what we call "grand challenges." Cybersecurity researchers are developing technologies and security strategies to enable the global cybersecurity solutions of the future. Tech's cybersecurity research efforts are multidisciplinary and Institute-wide, involving researchers from the College of Computing, College of Engineering, Ivan Allen College of Liberal Arts, and the Georgia Tech Research Institute.

Scientists and engineers in the College of Engineering, College of Sciences, and GTRI are applying their expertise and tools to address and answer questions about how the brain works. Because the human brain is immensely complex, the researchers are



Hugh Donald Ratliff, Jaymie Forrest, and Harvey Donaldson are helping to improve America's manufacturing through the Supply Chain and Logistics Institute.

working collaboratively on areas such as molecules, cells, circuits, the mystery of the mind itself, brain disorders, development, vision, speech, movement, and memory. Those are just two examples of dozens of ways interdisciplinary research by Tech faculty, staff, and students is benefiting society.

Manufacturing

Manufacturing is a high priority for Georgia Tech, Georgia, and the nation. Manufacturing is the largest contributor of U.S. exports, is the source of millions of jobs, and is critical to our nation's economic strength and future. Last summer President Obama outlined an Advanced Manufacturing Partnership, or AMP, a national effort to bring together industry, universities, and the federal government to develop ways to create jobs and to help spark a manufacturing renaissance in the United States. As Georgia Tech's president, I am serving on the National Steering Committee, along with the presidents of five other universities.

Georgia Tech is developing technological innovation across many domains—such as telecommunications, microelectronics, biotech, energy, and robotics—that will drive new products and future U.S. manufacturing opportunities. Tech is also very successful in developing process and system innovations in a number of areas such as manufacturing research processes through our Manufacturing Research Center, in

global supply chain design and management through our Supply Chain & Logistics Institute, in transportation and logistics infrastructure and information systems through our national University Transportation Center, and in technology transfer and performance improvement services to Georgia manufacturers through our Economic Innovation Institute, which operates the Manufacturing Extension Partnership program for Georgia.

Creating a Culture of Innovation

We are actively and aggressively working to commercialize the technologies developed at Tech, moving the discoveries made in our laboratories to the marketplace and building the companies that will create jobs, drive our economy, and stimulate economic growth. The Institute is a leader in innovation, entrepreneurship, commercialization, and economic development, and we are continuing to initiate and foster programs designed to strengthen these efforts.

Recent programs include the Georgia Tech Integrated Program for Startups, which combines a streamlined licensing program with organized support for faculty and student inventor-entrepreneurs, and Flashpoint, Tech's new technology

Right: Team Re-Hand captured first place in the 2012 InVenture Prize competition. Shown (l-r) are team members Alkindi Kibria, Daphne Vincent, Elizabeth LaMar, and Kunal MacDonald, all Bio-medical Engineering majors.

Below, from left: Fourth-year student Melissa McCoy and alumnus Benjamin Cohen work on Tubing Operations for Humanitarian Logistics (TOHL). Student-designed Sanivation has the potential to save many lives.

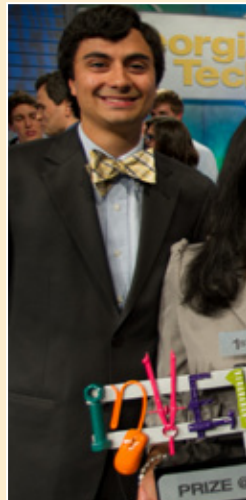


Photo courtesy of TOHL.

accelerator program. In January, Flashpoint held its first demo day with fifteen startups including Georgia Tech faculty, staff, and students in the initial group. The program is designed to lure promising technology, medical device, and biotech startups to the metro Atlanta area. The programs are supported by VentureLab, Tech's comprehensive center for technology commercialization, and the Advanced Technology Development Center (ATDC), which has helped to launch successful companies for more than thirty years. In October Tech was named as one of twenty-one teams selected for the National Science Foundation's inaugural class of NSF Innovation Corps, or I-Corps, awards.

One of the main goals outlined in the Strategic Plan is to ensure that innovation, entrepreneurship, and public service are fundamental characteristics of our graduates.

Ideas to SERVE (I2S) holds an annual competition for students to use creativity and technology to solve community and social issues and sustain the environment. This year two student teams— Sanivation, a solar toilet system, and Tubing Operations for Humanitarian Logistics, a design to get potable water to a post-disaster environment—won \$40,000 grants from Startup Chile to refine their designs and test their models.



Civil rights leader Myrlie Evers-Williams spoke at an event on campus during the Martin Luther King Jr. week of celebration.

Our annual InVenture Prize competition gives students experience in innovation, working as a team, designing a business plan, and communication before a live television audience. This year's winner was "Re-Hand," a software-assisted home-use hand assessment and rehabilitation device. The winning team received a cash prize of \$15,000, a free U.S. patent filing by Georgia Tech's Office of Technology Licensing, and automatic acceptance to the 2012 class of Flashpoint.

Diversity

Georgia Tech continues to develop and enhance programs and opportunities to increase diversity. With a minority population of 34 percent, Georgia Tech is one of the most diverse universities in the world. We have students who represent every state in the nation and 118 countries. In the past three years we have increased the number of underrepresented minorities in the freshman class by 40 percent. This year Georgia Tech expanded the commemoration of the life and works of Dr. Martin Luther King Jr. with MLK Week. The fall diversity symposium and diversity roundtable for staff in summer are being enhanced and expanded. A new Internet portal will be launched in the near future to better communicate programs and resources available. We aspire to be an Institute that pursues excellence and embraces and leverages diversity in all of its forms.



The TechArts program is co-chaired by Aaron Bobick, chair of Interactive Computing, and Gil Wienberg, director of the Center for Music Technology.

Students

Tech's student body includes more than 21,000 undergraduate and graduate students. In fall 2012 we will welcome the largest, best-qualified and most diverse freshman class in Georgia Tech's history, including a record number of women. We have received 14,700 applications for fall 2012, an increase of 3.5 percent over 2011. The average high school GPA for the 2012 admitted class is 3.90, with an average math-verbal SAT score of 1397.

Not only do Georgia Tech students excel academically, but many also have talents and interests in numerous other areas, including the arts. TechArts, a campus-wide initiative inspired by the Strategic Plan, produced a special week of activities in February. The first art crawl at the Clough Undergraduate Learning Commons featured more than 160 submissions, including paintings, photographs, and sculptures, along with instrumentalists and other performing artists. More than 1,000 Tech students took advantage of Woodruff Arts passes as well as "GT Nights" at the Woodruff Arts Center.

This year marks the 100th anniversary of cooperative education at Georgia Tech. More than 50,000 Georgia Tech students have participated in the nation's largest voluntary cooperative education program, including 5,000 current participants.



The ACC recognized James White (golf), Christy Jones (softball), and Guillermo Gomez as the ACC Scholar Athletes of the Year for their respective sports.

Top: Dr. William H. Foege (center) received the Ivan Allen Jr. Prize for Social Courage. Below: Class of 1934 Distinguished Professor Award recipient Richard Lipton, Professor, College of Computing.

Student Athletics

Nearly 400 student-athletes compete in 17 intercollegiate varsity sports. In 2011, Georgia Tech's football team earned a bowl berth for the fifteenth consecutive season, which ties for the fourth-longest current streak nationally. The women's basketball team earned a bid to the NCAA Tournament for the sixth consecutive year and advanced to the round of sixteen for the first time in school history. In the spring of 2011, the Yellow Jacket golf team won a third consecutive ACC championship, and Paul Haley won individual honors. Softball and baseball both won or shared ACC regular season titles. Men's tennis coach Kenny Thorne was named national coach of the year, and Bruce Heppler (golf) and Sharon Perkins (softball) were both named ACC Coach of the Year.

Georgia Tech student-athletes continue to excel in the classroom as well as the competitive arena. Tech's Academic Progress Report (APR) improved for the fourth consecutive year.

Faculty

Georgia Tech faculty continue to receive numerous prestigious awards. We have 173 faculty who have won NSF CAREER Awards, among the highest number received nationally by any institution. Barbara Boyan was elected to the National

Academy of Engineering this year, bringing the number of faculty members elected to the National Academy of Engineering to 28, which is among the top 10 universities in the nation. Faculty are increasingly winning awards associated with the arts and humanities, including Fulbright Fellowships, Newberry Library Fellowships, National Endowment for the Humanities Fellowships, and Sloan Research Fellowships.

Ali Adibi (ECE), David Bader (CSE), Robert Butera (ECE/BME), and Paul Stefes (ECE) were named 2011 Fellows by the American Association for the Advancement of Science (AAAS). Professor Emeritus Arnold Stancell (CHBE) was appointed to the National Science Board. Mark Prausnitz (CHBE), Seth Marder (CHEM), and Gary Schuster (CHEM) were appointed Regents' Professors by the University System of Georgia Board of Regents. The Regents also appointed two Regents' Researchers: Giselle Bennett (EOSL-GTRI) and Principal Research Scientist Suzanne Eskin (BME). Doug Flammig (IAC) and Stavros Garoufalidis, Mathematics, were named as 2012 Guggenheim Fellows.

Tech currently has 191 endowed or honorary chairs and professorships, and we are working to secure philanthropic support to provide endowed professorships for one in every four tenure-track faculty as part of Campaign Georgia Tech. It is an ambitious

goal, but we are committed to attracting, developing, and retaining the very best faculty in the nation.

Staff

This year Georgia Tech welcomed several staff leaders, including Jim O'Connor, vice president, Office of Information Technology and chief information officer; Paul Strouts, vice president of Campus Services; and Ben Wang, executive director of the Manufacturing Research Center (MaRC) and chief manufacturing officer.

In the three years that I've had the privilege of serving as Georgia Tech's president, several teams have made organizational changes to improve effectiveness. This year the Office of the Provost under Rafael Bras streamlined to focus on five priorities: undergraduate education, graduate education and faculty affairs, learning excellence, international initiatives, and enrollment services. Other offices that have reorganized include Research, Administration and Finance, and Government and Community Relations. Archie Ervin is leading a reorganization to maximize the effectiveness of Institute Diversity, including improving collaboration with Human Resources and Student Affairs.



Provost Rafael Bras



Reginald DesRoches has been appointed as the new Karen and John Huff Chair in the School of Civil and Environmental Engineering. He has gained national prominence as an expert in earthquake engineering and seismic risk assessment.

Strategic Plan

Georgia Tech is in the second year of implementing the twenty-five-year Strategic Plan, “Designing the Future.” Much progress has been made by the project teams that are working on a range of subjects including undergraduate education, technology transfer, and campus culture. Providing feedback and project support are the faculty, staff, and students serving on the Strategic Plan Implementation Steering Committee. In addition, individual units within the Institute are continuing to develop and implement their strategies to bring the plan to life.

Campaign Georgia Tech

To support our Strategic Plan we launched Campaign Georgia Tech in fall 2010. Last September we began a series of national and international campaign launch events, with forty held to date. As of March 31, 2012, we had raised more than \$1.1 billion toward a goal of \$1.5 billion by December 2015.

We are very grateful to John F. Brock III (ChE 1970, MS 1971), chairman and CEO of Coca-Cola Enterprises, as well as his wife Mary for their tireless leadership in co-chairing the public phase of Campaign Georgia Tech. Our campaign, and in fact the level of giving at Georgia Tech, is the envy of most public universities and many private ones. Many of the programs, scholarships, faculty chairs, and buildings that we enjoy would not be possible without the philanthropy at work here at Georgia Tech.

Facilities

Many of the facilities we’ve been able to build at Georgia Tech have been made possible through a partnership between our supporters and the State of Georgia. The latest example is the Engineered Biosystems Building (EBB). Georgia Tech has committed \$34 million in institutional and private funds. This past session the Georgia Legislature approved \$59 million in the state’s FY 2013 budget. Construction is scheduled to begin this summer.

EBB will foster economic development opportunities and enhance Georgia’s competitiveness by serving as a resource for Georgia’s growing biomedical research industry. The 200,000-square-foot facility will create additional cross-disciplinary research space to accommodate the expansion of Georgia Tech’s biomedical research enterprise. It will generate additional opportunities and needed research capability for enhanced partnerships with institutions such as Emory University, Emory University Hospital, and



Top: The Engineered Biosystems Building (EBB)

Center: McCamish Pavilion

Bottom: The Clough Commons rooftop provides opportunities for informal student/faculty interactions

Children's Healthcare of Atlanta, as well as industry. Scheduled for completion in 2015, the EBB will be an extension of Georgia Tech's existing Life Sciences Complex.

Improvements this past year have included the North Avenue corridor, the Kessler Campanile, the new Campus Transit Center, and the Global Center for Medical Innovation. Our football team has benefited from the Mary R. and John F. Brock III Indoor Practice Facility, and we're looking forward to the completion of the McCamish Pavilion and construction of the Ken Byers Tennis Complex.

Perhaps the most exciting addition to our campus this year has been the Clough Undergraduate Learning Commons, also made possible through a partnership between philanthropy and state support. The facility has become a resource for every undergraduate student to the point that we wonder how we ever got along without it. Students are using it 24/7, and it's not unusual to see groups of students studying there and working on projects in the wee hours of the morning. During just the first semester, there were over 1 million visits to Clough Commons. The facility is symbolic of the way we are transforming undergraduate education, allowing for more collaboration, cross-disciplinary learning, and interaction with faculty. Students are taking advantage of centralized core support services. Because the Clough Commons is linked to the library both physically and intellectually, students are benefiting from boundless resources

in a common enterprise designed to enhance their undergraduate experience in a single location.

The Investment of a Lifetime

There has been much media attention for the past couple of years paid to the rising cost of a college education. The issue is not that the actual costs of educating students are increasing significantly—the real story is that students and their parents are having to increase their portion of their educational investment. Because of our economically challenging environment, state governments throughout the nation are being forced to make the difficult decision of reducing support for colleges and universities. Georgia Tech employees, like those at many state institutions and agencies, will have gone without a general pay raise for four consecutive years. While we relentlessly pursue institutional effectiveness as outlined in our Strategic Plan, controlling costs alone doesn't provide the resources needed to ensure we offer the caliber of education for which Georgia Tech is known.

While sharing more of the costs is a challenge to many students and their families, a college education, especially at a public college or university, is the investment of a lifetime. A Georgia Tech education is a particularly sound financial investment. This spring Bloomberg/Business Week ranked Georgia Tech number two in the nation, and first in the state of Georgia, in annualized

return on investment, or ROI, based on the financial return graduates earn from their degree. Our graduates are in high demand because of the value of their degree and their preparation to be innovative in developing solutions.

We continue to work to ensure that a Georgia Tech education is possible for every qualified student. We're especially proud of the Tech Promise program, mentioned earlier. Since the program began in 2007 more than 500 students have participated, including 200 who have graduated. We were also privileged to be the first university to pledge to participate in the REACH scholarship program for in-state students with financial needs that Governor Nathan Deal announced in a news conference on the Tech campus this spring. It is just one of the numerous ways we partner with the state and the community to make a lasting impact.

Georgia Tech was founded 127 years ago to meet the economic and educational needs of the state. It has grown into an institution with a strong global reputation for excellence because of the quality of its graduates; its outstanding faculty and staff; its cutting-edge interdisciplinary research; its partnerships with business, industry, government, and the community; and its thought leadership. Georgia Tech would not be where it is today without the commitment of its faculty and staff, the loyalty of its alumni, and the support of its friends and partners. Thank you. We greatly appreciate your continued support.

