PRESIDENT'S UPDATE

SPRING 2011

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PRESIDENT, GEORGIA INSTITUTE OF TECHNOLOGY

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As we end the spring semester, it is appropriate to pause a moment and reflect on what we, as members of the Georgia Tech community, have been able to accomplish together this past year, while at the same time highlighting some of the challenges that lie ahead.

Strategic Plan

Since we started the implementation of our new Strategic Plan, "Designing the Future," last September, we have made significant progress in a number of areas and have begun to strengthen our foundation for global leadership. Nearly every facet of the Georgia Tech community has been engaged in the development and implementation of a series of strategies and initiatives designed to bring the five overarching goals to life. Some of these are Institute-wide initiatives designed to translate our Strategic Plan into action – things like creating transdisciplinary opportunities; while others are entirely new initiatives that resulted from more than 130 white papers submitted by the various schools and colleges, or our research and academic units. Together, they outline how we can use the Strategic Plan as a living document to provide flexibility for future needs, while at the same time building on our existing strengths and exploring future opportunities. You'll see examples of this implementation in several of the topics that follow.

Innovation

During the development of the Strategic Plan, one of the recurring questions was, "How do we best prepare our students to address some of the global challenges we as a society face today and ensure the quality of our research and educational programs in an increasingly competitive and global job market?" We believe that to do so, we must foster an environment of innovation and creativity, develop critical thinking skills, and mentor students to become the problem solvers and global leaders of tomorrow. Tech is already a leader in this arena. For fiscal year 2010, 41 percent of Georgia Tech inventors were either graduate or undergraduate students, and 80 percent of the invention disclosures listed at least one student as a co-inventor. Tech students are designing new devices for heart surgery and pneumonia diagnosis. They are traveling across the world to design and install systems to provide clean water in small rural villages and they are developing solar toilets to improve hygiene – in essence, significantly changing and saving lives.

We are working to provide even more opportunities to foster innovation for our students, such as expanding the InVenture Prize competition for undergraduate students, and the Georgia Tech Research and Innovation Conference for graduate students. As part of our Strategic Plan we are exploring numerous ways that we can be "The Innovation Institute," including establishing an Innovation Hub at Tech that will engage faculty and students, embedding industry on campus, and offering programs and resources for faculty.

The 2011 winner of the InVenture Prize at Georgia Tech was the Slide Capo, designed by Industrial Design student Daniel Chaney (far left). Finishing second was Magnetic Assisted Intubation Device (MAID), a medical device designed to facilitate the procedure of placing a breathing tube into the trachea. Team members (left to right) included Alexander Cooper, Shawna Marie Hagen, William Jacob Thompson and Elizabeth Ann Flanagan, all Biomedical Engineering (BME) students.

Research

Despite ongoing economic challenges and the concomitant reductions in state and federal resources, Georgia Tech faculty and staff have worked together to increase research funding to nearly $600 million in new sponsored research awards, by far the largest amount in Tech's history. This includes $31.2 million in National Institutes of Health funding. Sponsored awards at Tech have doubled in 10 years, and tripled over the past 15.

Georgia Tech is already a research powerhouse. To maximize efficiency and impact, we've aligned the major components of our research functions—the Georgia Tech Research Institute and the Enterprise Innovation Institute (EI^2)—along with our six colleges and other Georgia Tech support functions, to form a single, unified research enterprise under the leadership of Executive Vice President for Research Stephen E. Cross.

We are creating interdisciplinary research institutes to leverage expertise and resources in support of strategic initiatives, to facilitate collaboration with business and industry, and to foster innovation and global leadership. One example is the creation of the Center for 21st Century Universities (C21U). The center, based in the College of Computing, includes faculty from Management, Public Policy, and Industrial and Systems Engineering. It focuses on the role of disruptive technologies like social networking, and innovations like open courseware, serving as a living laboratory for testing new transformational educational ideas and approaches.

To support the Strategic Plan's focus on faculty-led, interdisciplinary, and transformative research, we launched the Institute for People and Technology (IPaT). Similar to the Petit Institute for Bioengineering and Bioscience, IPaT will catalyze research activities, create new economic development opportunities, and address important societal problems. It will support various college research centers that collectively pursue transformations in healthcare, education, consumer media, and other complex human enterprises by integrating advances in human-centered computing, architectural and digital design, policy, and system science and engineering.

To leverage existing research expertise and resources in support of strategic Institute initiatives, we formed the Institute for Electronics and Nanotechnology (IEN). The new interdisciplinary research institute consolidates multiple electronics and nanotechnology research centers and related programs into an organization designed to enhance support for rapidly growing programs spanning biomedicine, materials, electronics, and nanotechnology.

We introduced the Georgia Tech Fund for Innovation in Research and Education (GTFIRE) to facilitate planning for large extramural proposals.

(Photos from top) Students and faculty have developed PneumoniaCheck, a device that could prevent thousands of people worldwide from dying of pneumonia each year. From left are Tamera Scholz, MS '10 ME, Taylor Bronikowski MBA '10, and David Ku, Georgia Tech Regents' Professor of Mechanical Engineering and L.P. Huang Chair Professor for Engineering Entrepreneurship in the College of Management.

Z. L. Wang, Hightower Chair in Materials Science and Engineering, Regents' Professor, and College of Engineering Distinguished Professor, is a pioneer and a leader in nanoscience and nanotechnology, internationally recognized for his contributions to their application in energy research, electronics, and bioscience.

Professor Mark Hay (left), the Harry and Linda Teasley Chair in Environmental Biology, is the principal investigator for Aquarius Reef Base, the world's only underwater ocean laboratory located in the Florida Keys National Marine Sanctuary.
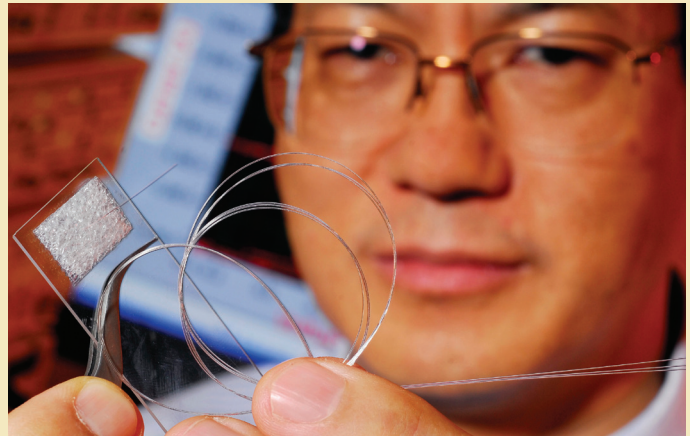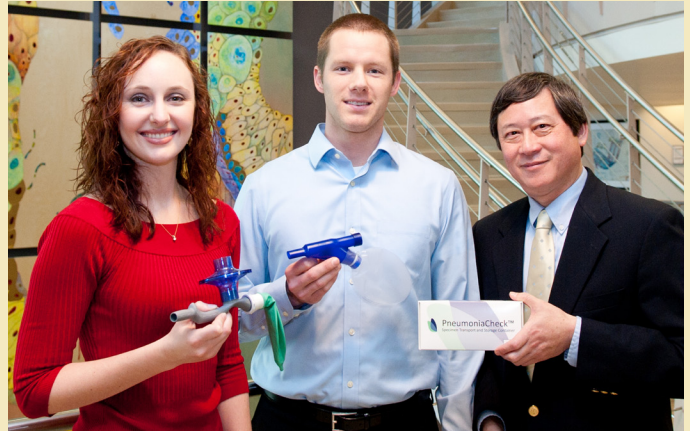
The most important investment we can make is in our people; students, faculty, and staff.

Students

Tech's student body includes nearly 21,000 undergraduate and graduate students, including one of the largest, the best-qualified, and most diverse freshman class in Georgia Tech history. Fall 2011 admission applications are up almost 5 percent over 2010, with 14,200 applications for 2,650 slots. The average high school GPA for the 2011 admitted class is 3.94, with an average SAT of 2099, both reflecting an increase over last year.

First-year retention has increased from 86 percent in 1999 to 94 percent in 2010, and the six-year graduation rate has increased from 68 percent in 1999 to just over 80 percent in 2010.

In fall 2010, Georgia Tech ranked second among public universities in the percentage of freshmen who were National Merit Scholars and first in the percentage who were National Achievement Scholars. Here are a few examples of 2010-2011 award recipients. After earning his PhD from Tech, Jason Dillon was awarded a Marshall Sherfield Fellowship at Cambridge. Sean Sanders, ECE, was awarded an AT&T Fellowship. Andria Deaguero, CHBE, earned the Knowles Science Teaching Fellowship. Colby Mangels, IAML, was awarded a Fulbright Scholarship in Switzerland. Georgia Tech alumnus Nick Wellkamp, ISYE/Public Policy, was named a Marshall Scholar to attend the University of Oxford to pursue a master's degree in economics.

We are very proud of the G. Wayne Clough Georgia Tech Promise Scholars program that provides an opportunity for qualified in-state students to attend Georgia Tech, regardless of their family income. Since its initial launch in 2007, more than 450 students from 78 counties in Georgia have become Tech Promise scholars.

As part of our Strategic Plan, we will continue to focus on ways to ensure access for all qualified students and to enrich the student experience by partnering with our students in their success.

We are exploring an X-College concept to increase student-faculty interaction and allow more flexibility in curricula. We are launching an undergraduate leadership program with multidisciplinary minors across all undergraduate programs, and a graduate leadership program in biomedical engineering.

Students are benefitting from our new and expanded strategic partnerships. For example, this year we established an agreement with the Woodruff Arts Center to allow students unlimited access to the arts at a deeply discounted rate. And, we recently announced an experimental program with Emory University that will allow Tech and Emory students to co-enroll in classes beginning this fall, thereby greatly expanding the academic offerings for students at both institutions.

Professor Barbara D. Boyan (second from left), Price Gilbert Jr. Chair in Tissue Engineering and Georgia Research Alliance Eminent Scholar in the Wallace H. Coulter Department of Biomedical Engineering at Georgia Tech and Emory University, is a leading researcher in regenerative medicine.

Faculty

Georgia Tech faculty continue to receive prestigious awards. We have 162 faculty who have won NSF CAREER Awards, among the highest number received nationally by any institution. The number of faculty members elected to the National Academy of Engineering now stands at 27, 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.

While it is not possible to include all of them, I would like to share a few examples of awards Tech faculty received this year. Two School of Chemistry and Biochemistry faculty, Mostafa El-Sayed and Jean-Luc Bredas, were listed among the top chemists and materials scientists of the decade by Thomson-Reuters. Professor El-Sayed is director of Tech's Laser Dynamics Laboratory. Among his current research is using lasers on gold nanorods to fight cancerous tumors under the skin. Professor Bredas is a member of the Center for Organic Photonics and Electronics and a co-director of the Center for Computational Molecular Science and Technology. Zhigang Peng, an assistant professor in the School of Earth and Atmospheric Sciences, was awarded the Seismological Society of America's Charles F. Richter Early Career Award for his work contributing to the understanding of the physics of earthquakes and faults. William J. "Bill" Cook, Chandler Family Chair and professor in the H. Milton Stewart School of Industrial and Systems Engineering, was elected to the National Academy of Engineering. Professor Hugh Crawford in the School of Literature, Communication, and Culture earned the Felton Jenkins Jr. Hall of Fame Faculty Award in Teaching Excellence from the University System of Georgia Board of Regents. He was noted for his ability to design his courses to adapt to students.

Tech currently has 180 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 best faculty in the nation.

Staff

New leadership includes three new vice presidents: Rafael Bras, provost and executive vice president for Academic Affairs; Archie Ervin, vice president for Institute Diversity; and Michael Warden, vice president for Communications and Marketing. Pat McKenna assumed the role of associate vice president for Legal Affairs and Risk Management. We also welcomed two new deans, Zvi Galil, in the College of Computing and Jacqueline Jones Royster, in the Ivan Allen College of Liberal Arts. Other new leadership includes Scott Morris, associate vice president for Human Resources, and Amir Rahnamay-Azar, senior vice president for Administration.

As part of our strategic goal "to relentlessly pursue institutional effectiveness," we have implemented several business/management improvements, including BuzzMart for e-procurement and strategic sourcing, an online system for filing for travel and expenses, a job compensation and classification system for classified staff positions, and a talent acquisition system to help identify and attract the very best people possible.

(Top photo) Professor Hugh Crawford (standing at left) leads an Honors Program class and is in charge of the "Thoreau Housing Collective, Inc." The class includes researching tools and methods Thoreau used to build his cabin, and they constructed one on campus.

Provost Rafael Bras (left) congratulates a graduate during Fall 2010 Commencement.

Diversity

We recently expanded the duties and elevated the position of vice provost for Academic Diversity to a vice president for Institute Diversity, a position that serves on the President's Cabinet. Thank you for the work you have already done to support Dr. Archie Ervin as he works to ensure that we have a climate of inclusive excellence in all that we do here at Georgia Tech.

We are continuing to strengthen our national leadership position in the total number of engineering degrees awarded to underrepresented minority students and women. And, we now have a number of programs in place to recruit and retain underrepresented minorities in all of the academic program areas we offer—not just engineering.

In fall 2010, the enrollment of African American freshmen was up 24 percent from the year before, and the number of Hispanic freshmen was up 76 percent. Fall 2011 numbers for new underrepresented minority freshmen reflect another 10 percent increase in African American students admitted and a 26 percent increase in Hispanic students. This along with a 10 percent increase in the number of new admitted women students bodes well for the diversity of our student population.

As we commemorate the 50th anniversary of the matriculation of the first black students at Tech, we are reminded of how far we have come and how much more we need to do to recruit, develop, retain, and engage a diverse cadre of students, faculty, and staff to create a campus community that exemplifies the best in all of us and fosters inclusive excellence.

Athletics

More than 350 student athletes compete in 17 intercollegiate varsity sports. In 2010, Georgia Tech's football team qualified for a bowl game for the 14th consecutive year. The women's basketball team went to the NCAA Championship for the second year in a row and the softball, golf, and women's tennis teams all won ACC championships.

Georgia Tech athletes participate in the Total Person Program, which is based on the premise that excellence is the result of a balanced life that encompasses academic excellence, athletic achievement, and personal well-being.

Georgia Tech student-athletes continue to excel in the classroom as well as the competitive arena. In 2010, five Georgia Tech teams—baseball, golf, volleyball, and men's and women's cross-country—were recognized for achieving Academic Progress Report (APR) scores that place them in the top 10 percent nationally for their respective sports. All in all, I55 Georgia Tech student-athletes were named to the ACC Academic Honor Roll.

(Center photo) Georgia Tech junior Jillian O'Neill was named to the All-ACC Women's Tennis Team. She has played No. 1 singles since mid-March 2011.

(Lower photo) Robert Braun is the David and Andrew Lewis Associate Professor in Space Technology in the Daniel Guggenheim School of Aerospace Engineering and serves as NASA's chief technologist. In 2011 he was awarded the Von Karman Lectureship in Astronautics by the American Institute of Aeronautics and Astronautics.

National Prominence

Tech continues its national leadership, and is enhancing national prominence in a number of areas. Last November, the U.S. Department of Education (DOE) announced that Georgia Tech, in partnership with the Georgia Department of Education, would receive $7.5 million in funding through the DOE's Race to the Top to expand STEM programs through our outreach center, the Center for Education Integrating Science, Mathematics, and Computing (CEISMC).

Tech's vision is that we will be leaders in influencing major technological, social, and policy decisions that address critical global challenges. Our goal is for "What does Georgia Tech think?" to be a common question in research, business, the media, and government. Our efforts were enhanced by the Tech faculty members who testified before Congress in their respective areas of expertise, including Professors Danny Boston, Sy Goodman, and Reggie DesRoches. Professor Gil Weinberg was invited to present his robot Shimon and other research from Tech's Center for Music Technology at the 41st meeting of the World Economic Forum in Davos-Klosters, Switzerland, in January. Professor Stuart Graham is on a two-year leave from the College of Management to serve as the first chief economist for the U.S. Patent and Trademark Office, and Aerospace Engineering Professor Robert Braun is NASA's chief technologist. And the list goes on.

Last summer Georgia Tech was one of four universities nationwide to host a forum on American Innovation coordinated by the U.S. Department of Commerce. Through a number of national appointments, Georgia Tech continues to expand its leadership position in taking innovation and creative ideas from universities to the marketplace to create jobs, develop new businesses, and drive economic growth.

When the Japan disaster struck last March, Georgia Tech faculty were called upon to assist, to speak with the media, and to offer their advice to U.S. and Japanese government agencies and companies about everything from earthquake engineering and environmental radiation to humanitarian logistics. Faculty experts held a panel discussion on the ongoing crisis. These are just a few examples of Georgia Tech's growing leadership.

Globalization

We are continuing to explore and identify the best opportunities to expand Georgia Tech's international presence as part of an overall strategy for international engagement and leadership. We formed a faculty advisory group to make recommendations for international priorities and partnerships.

Over the past year we joined with the Metz, France, government and the Centre National de la Recherche Scientifique (CNRS) to create the LaFayette Institute at Georgia Tech-Lorraine, established Georgia Tech-Ireland as a translational research institute through a three-way joint venture, and launched a Logistics Innovation and Research Center in Panama and a Trade, Innovation, and Productivity Center in Costa Rica.

While more than 40 percent of our undergraduate students already have an international experience (study, work, and/or research abroad) before they graduate, we are working to ensure that every student has an opportunity to participate.

Economic Impact

Our commitment to cutting-edge research, cultivating dynamic new businesses, and partnering with business, industry, government, and education will ensure that Georgia Tech will continue to be a positive force and influence for prosperity in the state, the nation, and the world.

Georgia Tech has an annual economic impact of more than $2 billion and last year Georgia Tech research labs produced more than 400 invention disclosures, ranking Tech as one of the state's top producers of patents, ranking third behind AT&T and Kimberly Clark.

This past year, the Enterprise Innovation Institute helped Georgia manufacturing companies reduce operating costs by nearly $35 million, increase sales by $243 million, and create or save more than 1,350 jobs. It served more than 250 technology startup companies that together generated capital activity of more than $157 million. Companies affiliated with the ATDC program reported revenues totaling more than $1 billion, and nearly 3,500 jobs.

(From left): Brent Duncan, MBA 2009, Justin Helsby, Emory JD 2009, and Walter Voit, PhD MSE 2009, TI:GER Program graduates now serving as CEO, COO, and general counsel and CTO, respectively, of Syzygy Memory Plastics Inc., a company they launched as students that is commercializing its shape-memory technology for ear plug products in industrial settings.

Campaign Georgia Tech

Many of you participated in the launch of the public phase of Campaign Georgia Tech, our $1.5 billion comprehensive campaign, last September. This is the most ambitious campaign in Georgia Tech history. Over the past few years, members of the Tech community, along with other friends and supporters, have already contributed almost $1 billion towards our goal. The generous philanthropy of our alumni, faculty, staff, and other supporters will help the Institute realize the goals outlined in the Strategic Plan, construct facilities, and add endowed chairs, professorships, and scholarships. Our students have joined in the Campaign through the formation of the new Student Alumni Association, which topped 2,000 members in its first year. We are hosting campaign launch events throughout the U.S. and in select international locations.

Facilities

In fall of 2011 the new Clough Undergraduate Learning Commons will provide a unique and comfortable environment where students can take advantage of hands-on, collaborative, and technologically enhanced teaching and learning opportunities in a beautiful, state-of-the art facility. The redesign of the Tech Walkway, the creation of a new Transit Hub, and the renovation of the Campanile will help to transform the center of campus and the student life experience. As part of a major initiative to develop the North Avenue Corridor for aesthetics, safety, and physical infrastructure, the new dining hall in the North Avenue apartments will open this summer.

Athletic-related facility projects include the Mary R. and John F. Brock III Indoor Football Practice Facility, the Ken Byers Tennis Complex, and McCamish Pavilion, the new home to Yellow Jacket basketball beginning in 2012.

The Challenges Ahead

It comes as no surprise that one of our biggest challenges, now and in the foreseeable future, is resources. The current economic environment continues to present challenges at both the state and national level. To offer some perspective, over the past three years, Georgia Tech's state appropriation has decreased by almost $90 million, or approximately 31 percent, and now accounts for less than 17 percent of our overall budget. Nonetheless, we continue to preserve the quality of our academic programs and ensure that we are able to provide an educational experience consistent with the very best institutions in the country. At the April Board of Regents meeting, the Regents approved tuition and fees for the member institutions of the University System of Georgia, including a tuition increase for resident students as well as an additional mandatory $350 per semester special institutional fee for all students at Georgia Tech. With these funds we plan to hire additional faculty to ensure the quality of our academic and research programs, accommodate our enrollment growth, and continue to ensure that a Georgia Tech degree is within reach of every qualified student who wishes to attend.

On a national level, while we understand the tremendous pressures on the federal budget, we should not compromise our future economic growth and security through deficit reduction measures that cut spending in areas that are critical to our nation's ability to innovate and compete. We will continue to communicate our message that scientific research should be among the country's highest priorities, for it is this research and investment that will generate the innovations and discoveries needed to boost our economy and create the new technologies that will lead to new and better jobs for our workforce. The message is clear: stable and sustained growth in funding for scientific research will allow institutions such as Georgia Tech to address and ultimately resolve many of the global challenges our society is facing today in areas that include energy, healthcare, clean water, climate change, and cyber security, to name just a few.

In spite of the many challenges we face, this has been a year of celebrations, including the Institute's 125th anniversary. It has also been an enormously productive one, looking ahead to envision how all of us here at Georgia Tech can help to reshape and "design the future," not only the future of our Institute, but the future of our nation. I fully recognize that the many successes and accomplishments highlighted here are the result of your efforts, those of our faculty, our staff, our students, our alumni, and our many supporters, and I thank you for your ongoing commitment and for investing your talents, your energy, and your leadership in order to ensure that we continue to improve the human condition here in Georgia, in our country, and around the globe. Many thanks for your continued support and for all that you do to make Georgia Tech the great institution it is today and to help to ensure that it is an even greater one tomorrow.

Sincerely,

G. P. "Bud" Peterson, President
Georgia Institute of Technology